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14.01.10 -

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- 2019

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1.	.....	16
1.1	.....	16
	E .....	16
1.2	.....	23
1.3	- .....	28
1.4	.....	34
( , , )	.....	43
2	.....	46
2.1.	.....	47
2.2	.....	48
2.2.1	- .....	49
2.2.2	.....	49
2.2.3	.....	49
( , )	.....	50
2.3	.....	50
2.3.1	.....	50
2.3.2	- .....	53
2.4	.....	55

2.5.	.....	55
3.		
3.1	.....	64
3.2	.....	65
	-	
	.....	76
4.		
4.1	.....	82
	-	
4.2	.....	82
4.3	.....	86
	.....	92
5.		
	-	
	.....	107
5.1		

	-	
	.....	108
5.2	-	
	.....	112
5.3		
	-	
	.....	117
	.....	131
	.....	139
	.....	141
	.....	143

**PASI** — Psoriasis Area and Severity Index

**sPGA** - static physician global assessment

-

**CD3<sup>+</sup>HLA-DR<sup>+</sup>** -

**CD16<sup>+</sup>** -

**CD19<sup>+</sup>** - -

**CD3<sup>+</sup>** - -

**CD4<sup>+</sup>** - -

**CD8<sup>+</sup>** - -

**CD4<sup>+</sup>/CD8<sup>+</sup>** -

**Th1** - - -

**Th2** - - -

**Th17** - - - 17

-

**TNF-** -

- -

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, 0,51 11,43%

[Chandran V. 2010, Kopel E. 2013, Rachakonda T.D. 2015, Michalek I. M. 2017].

65,8

100 ., [ . ., . ., . ., . ., . ., 2017].

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[ . . 2010, . . 2015,

. ., 2016., BlauveltA., 2008., Chandran V.R., et al., 2010,

Clark R.F., et al., 2015].

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[MrowietzU.et al., 2011].

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 [ . ., 2015, . .2016., PappK.A.2012., Reich  
 ., 2015].

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 [ . . 2014, Stern R.S., et al., 2012, Osmančević A., Gillstedt M., et al.,  
 2014].

21 -  
 , « »,  
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 . [ . ., . 2015, . . 2016.,  
 . ., ., 2017, Papp K.A., 2012, Reich ., 2015, , Warren R.B.2015.,  
 Eissing L. et al., 2016].

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 [ . . 2005,  
 . . 2008, . .2010, . .2012.,  
 . .2013., . . 2018., Mirandola P.2007 Kopel E.2013 .].

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[ . ., 2012, . ., 2013, . ., 2013, . ., 2018, Kopel E., 2013].

[ . . 2008., . ., 2010, . ., 2013, Harari M., et al., 2016].

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2.

( -1 , -2, -8, TNF- , -10)

3.

4.

( - , )

PASI sPG

67,6 32,5%

- 53,7 18,3%,

69,1 44,0%

CD4<sup>+</sup>, CD8<sup>+</sup>, (CD3+HLA-DR+), NK-  
CD4/CD8

-1 , -2, -8 TNF-

-10.

CD68, - CD3<sup>+</sup>  
CD4<sup>+</sup>/CD8<sup>+</sup> 0,62±0,12

CD8<sup>+</sup>,  
-1 , -

6, TNF- .

( , , ),

- CD4<sup>+</sup>, CD8<sup>+</sup> - ,  
CD4<sup>+</sup>/CD8<sup>+</sup>,

CD68, -1 , -6, TNF-

CD8<sup>+</sup>

CD3<sup>+</sup>, CD4<sup>+</sup>

-1, -2, -8, TNF-

-10

( , , ),

( «

» 161528).

» 161528).

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CD4<sup>+</sup>,

CD8<sup>+</sup> -

CD4<sup>+</sup>/CD8<sup>+</sup>,

CD68,

-1 , -6, TNF-

5.

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16.01.2019

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- ( , 2013), -

( , 2013), ( 2014), ( 2014), -

( 2013),

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( 2015, 2016, 2017),

( 2018), III

( 2017), VIII

( 2018),

23

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» 161528 (

05 2016 ).

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219

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143 76

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43

32

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1.1

E

0, 51 11,43% [200, 203, 207].

64 – 91%

[33, 67, 68, 127, 131, 189, 190, 215].

-23R-G/G, TRAF3IP2-A/A, TNFAIP3-A/C, ZNF313-C/C, TYK2-T/T, TNIP1-A/G, IL-23R-A/A, TRAF3IP2-G/G, TNFAIP3-A/A, REL-A/A, TYK2-T/G, TNIP1-G/G, ERAP1-G/G [67, 112, 126].

[25, 129, 131].

Arg/Pro

53

[131, 132,

170, 174, 193, 194].

9

PSORS1 – PSORS9.

PSORS1,

PSORS4,

1q21 , - IL-12B  
 IL-23R. , - SERPINB8  
 ZNF313, ZNF816. ,  
 - DR4, Casp10, IL12B, TNFAIP3, TNIP1[31, 67, 131,  
 170]. ,

[115, 131, 132, 153, 154.193, 194].

[3, 4, 18, 43, 44, 45, 69, 70, 131, 171,  
 172, 186, 191].

[70, 115, 129, 130, 131, 171, 172, 177, 179, 191].

[130, 131].

( , (NK), - ,  
 , ) ( - , CD8<sup>+</sup>  
 CD4<sup>+</sup> (Th1, Th17)  
 [44, 45,  
 133, 171, 195].

[131, 126, 127].

HLA-DRT

, -1 , -6, TNF- , , ,

- ,

CD11

, -12 -23,

- ,

Th1- - 1 - - h17 .

(Treg- ), CD4<sup>+</sup> T-

( ) + ,

Th- - [116, 131].

-

FOXP3,

[116, 131]. ,

Treg- in vivo Th17- [131].

T reg CD4<sup>+</sup>CD 25high

CD4<sup>+</sup>T- , Th1-

,

[131, 132, 195].

Th17, CD4<sup>+</sup> CD8<sup>+</sup>, CD45RA, (CD3<sup>+</sup>Ki67<sup>+</sup>), -

- - , -17, -22, -23 .,

,

[17, 18, 20, 22, 31, 47, 131, 132, 195].

ICAM-1,

- E- [44, 45].

.

CD4<sup>+</sup> CD8<sup>+</sup> -

[102, 131,

137, 147, 148].

- CD8<sup>+</sup> CD4<sup>+</sup>

[43, 44, 45].

- / -

D3<sup>+</sup>, D4<sup>+</sup>, D8<sup>+</sup> -

( D25<sup>+</sup>)

(HLA-DRI)

D4<sup>+</sup>, D45<sup>+</sup>R

D31<sup>+</sup>( -1)

[43, 44, 45].

3-5

[153].

(CD4<sup>+</sup>/CD8<sup>+</sup>)

- CD4<sup>+</sup>

CD8<sup>+</sup>

- [131, 132,

176].

[3, 117, 187,

190].

[67, 90,

113, 123, 131, 144, 145].

[69, 70, 95, 113, 156, 161, 172, 177, 195, 196].

- :

-1, -6, -10, -2, -8, -12, -15, -17, -22, -23, - ,  
- ( ) .

- h17,  
- -17 , -17F, -6, -8, -21 -22, -23,  
-

[2, 15, 96, 97, 115, 116, 126, 147, 196].

-17, E. Rouvier . 1993 [115].

-17

, , , ,  
, - , -1 , -22. [115, 131]

-12 -23,

[115, 177, 178].

-12 -23 -

h1 Th17

[115, 214]. Th1

TNF- , - , Th17 - -17 , -17F -22,

-1 , -2, -6, -7,

-8, -15, -18, - , , VCAM-1

ICAM [70, 150, 154, 172]. -23/Th17, ,

, - ,

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,

, [154, 161, 172].

-1

[3, 7, 157].

-1 :

[3, 7, 157].

NK-

-1

MyD88

(NF- ) [163.165, 193, 194].

-1

[43, 46].

-1

-1

[115, 126, 127].

-2

-

-2

Th1-

-2

NK-

IFN-

[43, 49, 131, 132].

-2,

[43, 45,

46, 131].

-6,

6

-1,

-2,

- ,

- .

-6

[62, 63, 75].

-8,

1, TNF- ,

-8

(NK- )

[2, 76, 78, 123, 142]. TNF-

[3, 67, 68,

89, 91, 20, 206, 208].

TNF- -IFN- , -

22, -17,

. [15, 136, 152, 187, 192].

PASI [3, 13, 41, 43, 45,

214, 215].

[34, 37, 100, 178, 189, 209, 210, 211].

-10,

-10

-10

Th1

: - , -1,

-2, -6, -8, -12,

HLA-DR - ,

Th0

h2 ,

-10,

[3, 5, 8, 55, 56 135, 147, 167, 183,

215].

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: -15, -18, -19, -20, -21, -31,

. [185, 188, 214].

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[64, 67, 198].

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. [52, 54, 93, 94, 123, 134, 187,

199].

, - ,  
 - -2, -3, -4, INF- .  
 . [3, 119, 135, 178, 190].  
 , ,  
 , ,  
 [67, 68, 69, 73, 75, 77]  
 ,  
 [5, 8, 123].  
 . [93, 94, 95].  
 : , ,  
 [51, 74, 122, 143, 154,  
 155, 175, 176, 177].  
 10 ,  
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 - ,  
 [69, 115,  
 151, 159, 161, 166, 195, 196, 197].  
 , -  
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 TNF- - , , ( ),  
 ( ), ( ), ( )-  
 40, -  
 12 -23 [69, 115, 121, 208]. - .  
 , ,  
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 ,

[69, 115, 121, 208].

-17 ( ,

) ( ), .

BCD-085

17

[115].

( - ),

(320-400 )

[66, 124].

[66, 124, 144].

[69, 211].

311

[96].

[60, 62].

( - ).

( ),

. [33, 66].

:

14]. [13,

[3, 135, 178, 198].

Solanum tuberosum, « »<sup>®</sup>, [13].

Halobium , Halobacterium [129].

R (+) S (-)- [37, 39, 40].

[193, 194].

[39, 193, 218].

NF-kB (nuclear factor kappa ),

(ICAM)-1). NF-

B

[51].

NF-kB

-1,

TNF- , -2, -6, -12, -8,

(ICAM)-1 [39, 40, 50193, 218].

600

NF-kB

[193, 198].

[39, 40, 41, 50,

69, 128, 129, 181, 182, 184].

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»

[37, 69, 101].

### 1.3

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[11, 26, 81, 116, 117, 133, 137, 191]

« , » [81, 114, 115].

[109].

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[109].

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[21, 27, 28].

( , ).

[21, 22, 27, 114].

[12, 105, 174].

[105, 114, 123].

[114, 123, 193].

65,2%

PASI(75)

PASI(75)  
[64, 65].

76,5%, PASI(50) 22,6%

PASI(75) 32% , PASI (90) 25%, PASI(50)  
33%, PASI(25) 9% .

PASI(75) 72%

( )

PASI(75) 18% , PASI(50) - 79%.

» ( ) [134, 135].

« » « » ( )

2 [132, 134].

« »

[90].

, )

« »

« »

[74].

. [49, 139].

. . 2008 .



16,6% ,  
PASI(50) 14,3 % [135].

PASI (75) 69,1%,

« »  
[113].

3-  
PASI(90) 73,0% , PASI(75)  
27,0% . 9,4±2,3  
[71, 72].

**1.4**

( , )

300

48

26

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( . 1.1).



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- 45o08' . . 33o39' . . ,  
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5,5 .  
-0,5 , -1,5 . [82, 105].  
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, 3,5 ( ).

4,5 ,

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: - 2154 , - 2223 , -

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+11,2°C, -

+24° , - 0° , +2° .

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762,4

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0,1 2,1 .

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(V . . .),

(I . . .),

(II . . .)

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, 1827 ,

19, 20

, . . . , . . . , . . . , . . . , . . .  
- , . . . , . . . , . . .  
, . . .

1926 .

[108].

[82, 105, 107].

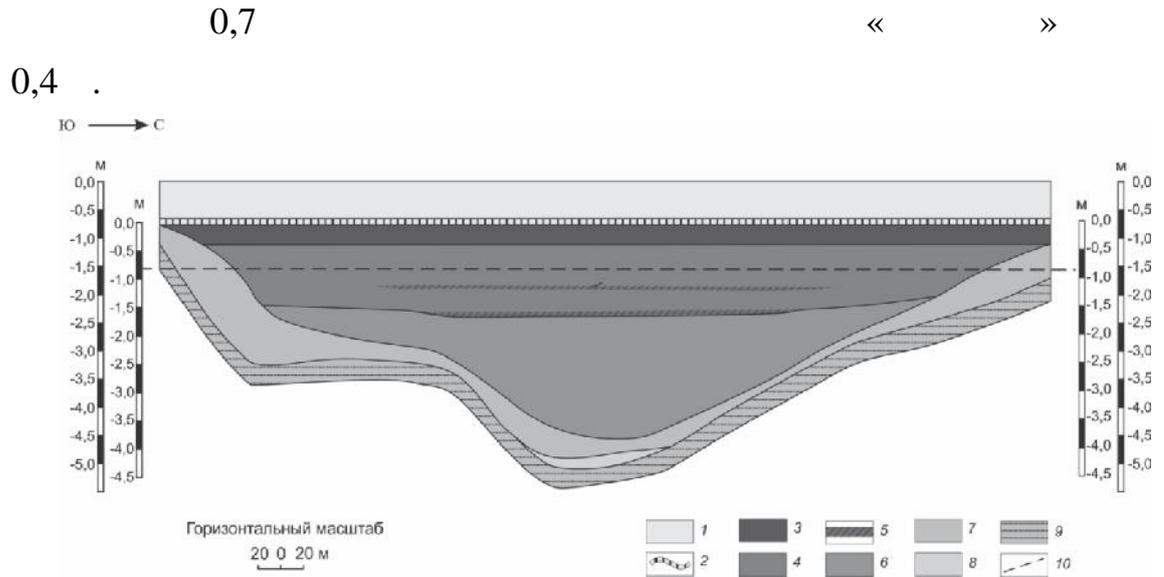
( 3,67 . ).

2010 -2013 . .

« » , . -

( .1.2.) [82].

0,1 1,2 . ,



.1.2

.2012 .

: 1 — ; 2 — ; 3 —  
; 4 — - -  
; 5 — « »  
; 6 — - , - ,  
« » ; 7 — - ,  
; 8 — - - ; 9 —  
; 10 —

39,6% , - 1,612 / <sup>3</sup>,  
2820 / <sup>2</sup>, - 0,52 / ,  
0,1 – 0,25 ,  
- 7,4  
- 270 mV  
( 200 mV). 0,44%

H2S-0,15%.

21.08.2012 .

		$\cdot / \text{ }^3$
	NH <sub>4</sub> <sup>+</sup>	0,02
	K <sup>+</sup>	1,5
	Na <sup>+</sup>	47,09
	Mg <sub>2</sub> <sup>+</sup>	7,63
K	Ca <sup>2+</sup>	26,1
	Fe <sub>2</sub> <sup>+</sup>	0,00008
	Fe <sub>3</sub> <sup>+</sup>	0,00002
	Cl <sup>-</sup>	93,8
	Br <sup>-</sup>	0,37
	J <sup>-</sup>	0,002
(SO <sub>4</sub> ) <sup>-</sup>	SO <sub>4</sub> <sup>-</sup>	16,13
	HCO <sub>3</sub> <sup>-</sup>	0,48
	NO <sub>2</sub>	0,0004
	H <sub>3</sub> BO <sub>3</sub>	0,23
pH		172,4 7,3

для состава пелоидов В

:

$$M 173,6 \frac{Cl 89(SO_1) 1}{(Na + K) 76 Mg 21 Ca 1} pH 7,4$$

, й с а: донных отлс

$$173 / \text{ }^3$$

- pH-7,3

pH

0,8 2,0 )

ICP-MS.

21.08. 2012 .

[82].

[114].

( 270-300 / )

09.11.2015 . -105 ( « » )

20-60 / <sup>3</sup>.

2013

( 10 ) [82, 8384, 85, 86].

1.2.

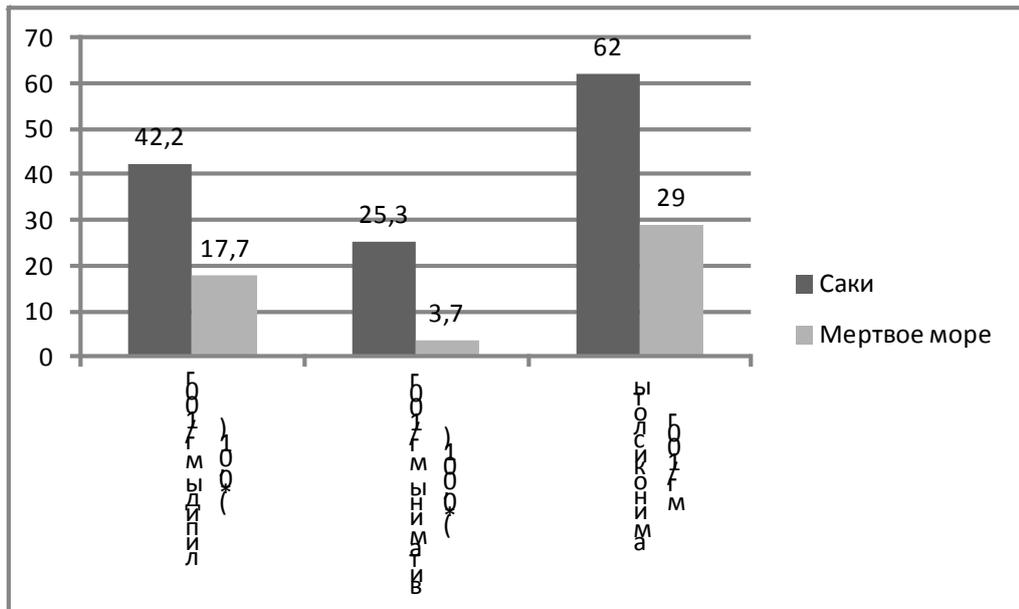
/		/	
		Na <sup>+</sup>	47,09
		K <sup>+</sup>	1,52
		Ca <sup>+</sup>	26,1
		Mg <sup>+</sup>	7,63
	/	Fe	14,5
		Br-	0,37
		SO <sub>4</sub> <sup>-</sup>	16,32
		HCO	0,47
		CL <sup>-</sup>	85,8
		J	0,002
		H <sub>3</sub> B0 <sub>3</sub>	0,23
			270-300
	PH		7,3
		Li	35,6
		Mn	542,7
		Se	1,52
		Zn	31,1
		Ru	58,0
		Cu	7,6

200 / pH -7,3 – , pH

[ ].

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( ), ( 1), ( ), ( )  
10 2,5 ( 1.3).



.1.3



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2

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**1** 45

, 27 , 18 .

1( ) -

18(40%), PASI - 7,43±1, 16

1( ) -27(60,0%) PASI

15,97±3,53.

1( )

( )

1( )

14 .

**2**

45

, (21 24 ),

- 2( )-16(35,6%) - PASI-7,55±2,29,

- 2( )-29(64,4%), PASI-5,78±3,45.

2( ) -

1 .600 1

14 .

2( )

- 1 600 -

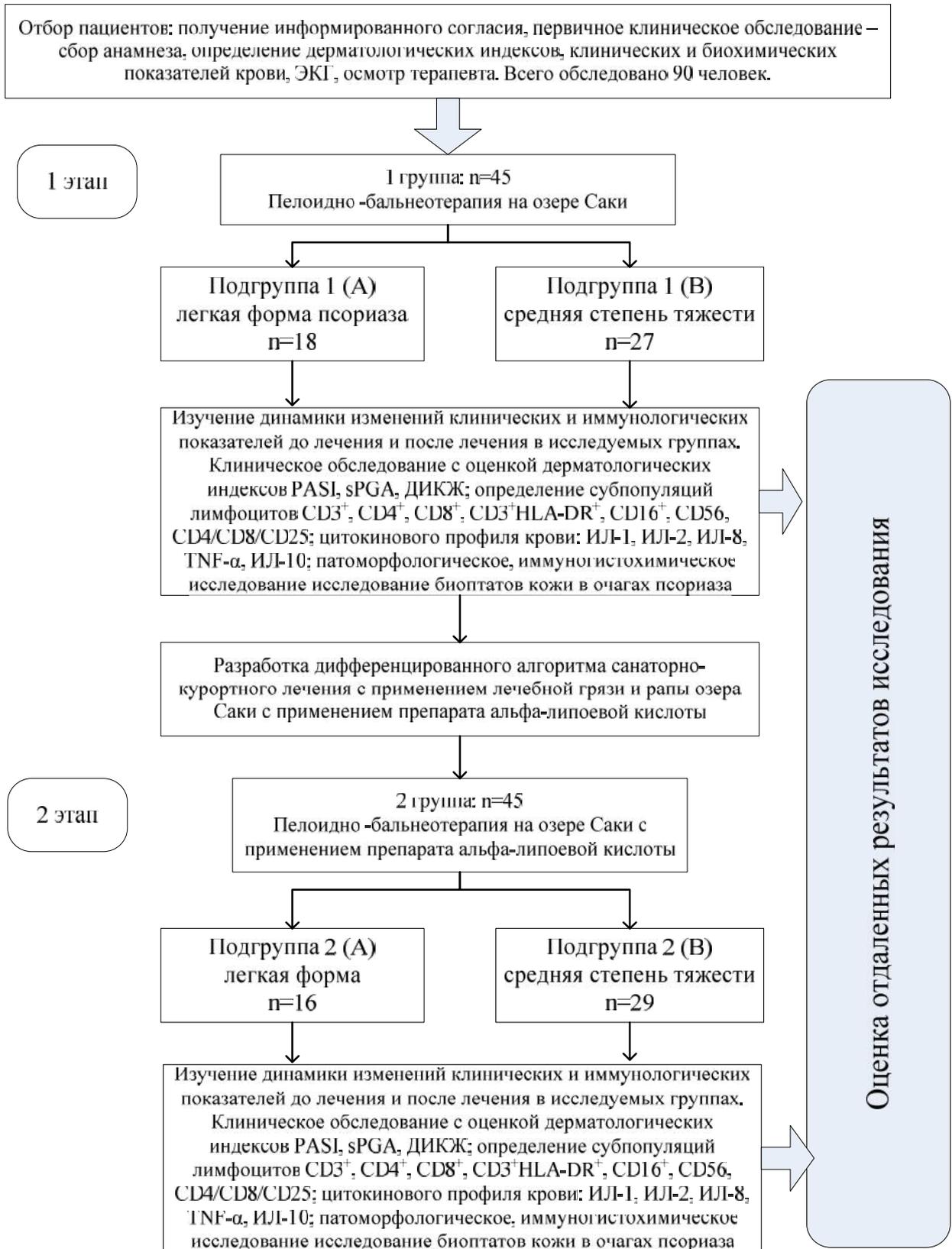
- 14 , 14 , - 28

(16 14 ),

30

,

### Дизайн исследования



2.1.

, .  
 , PASI-(Psoriasis Area and Severity Index) -  
 [Fredriksson, U. Pettersson, 1978],  
 sPGA [static physician Global Assessment],  
 ( ,  
 , ) . 0  
 5, 0 – , 5-  
 .  
 14 .  
 PASI : 10,0  
 PASI – 10 20 .  
 (Fredriksson T. et al., 1978).  
 PASI  
 PASI.  
 PASI  
 :  

$$(PASI_{\text{baseline}} - PASI_{\text{treatment}}) / PASI_{\text{baseline}} \times 100\%$$
 :  
 PASI 90%  
 .  
 PASI(75)  
 75-89%,  
 PASI(50) - PASI c  
 50-74%. PASI (25)  
 25-49%.

PASI.

PASI.

( ), , 10  
 . ,  
 ,  
 .  
 0 30 , [63, 99,  
 168, 169] (Finlay A.Y. et al., 1998, . . . , 2001 ).

2.2

2  
 : (90) 30  
 . ,  
 , 14 . , 10  
 (1), 10 (2), 10 .

. . . .

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2.2.1

-

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( )

“DakoCytomation, Denmark A/S”[Reichert T., DeBruyere M., DeneysV. et al. Lymphocyte subset reference ranges in adult Caucasians // Clin. Immunol. Immunopath.- 1991.- 60.- P. 190-208].

, 100 (50

/ ) 10

15

100

« »

CyLyse (CyTecs GmbH, Germany),

10

2, 5

« »

CyLyse,

20

PAS-III (Partec GmbH, Munster, Germany).

Partec FloMax Operation and Analysing SoftWare Version 2/4d (Partec GmbH, Munster, Germany).

- CD4<sup>+</sup> CD8<sup>+</sup>

-

CD4<sup>+</sup>/CD8<sup>+</sup>.

PGMG (Partec GmbH, Munster, Germany).

2.2.2

- 1, -2, -8, TNF-  
 - 10, :

, 14  
 ( ) -

Orgenium( ). ( ) - ;

StatFax2100

(AwarenessTech.Inc., USA).  
 ( / ).

2.2.3

( , )

, 10 (1) 10

(2). 10

.

, 4 (Biopsy Punch 4, 0 mm)  
 2% .

0,4 0,4 0,5 10%

. 10 ,

.

24 .  
 (50%, 60%, 70%, 80%, 96% - 1, 96%

- 2 ), ,

+37° , +56° ,

4-5

[147].

( )

3-5 («Menzel-Glaser», )

DAKO

[137].

CD3 – , CD4 (Clone 4B12), CD8 (Clone 8/144 ) (DakoCytomation), CD68 (Clone PG-M1, 1:50).

: TNF- , -1, -6. EnVision™ FLEX+, Mouse, High pH (Link), Code K8012 DAKO.

TNF- , -1, -6 CD68,

5

200

DP SOFT.

«Olympus CX-41».

## 2.3

### 2.3.1

«

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» 2010 ., 2015 .  
[109, 130].

( ).

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( PASI).

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14 .

(PASI<10),

« », « »

20-25 . t°-38°

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( 40 / , t°-37°C) 15 .

15 .

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« », « ».

15 t°-36-37° .

40 /

, t°-37° 15 .

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37-38°

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15-25 .

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36-38°

30-40 .

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( 40 / )

37-38° .

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15-20

20-30

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### 2.3.2

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14 -

. [20, 21, 162, 164, 194, 218].

**(Thioctic acidi)**, « ®600» ( - - )

Menarini Group Berlin-Chemie AG (Menarini Group.

600 , 15, 30).

: -001615.



. 2.4

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2 8

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-1, -2, -6, TNF- ,

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. [20, 32, 39, 40, 48, 103, 124, 141,

212].

:

1 600 , 20-30 . ,

1 . 600 .

14



( 1 2)

: PASI

&lt;10

- PASI &gt;10 -

2.1.

2.1

	1			2			
	n=45			n=45			
	.	%	PASI	.	%	PASI	
	18 1( )	40,0%	7,43±1,16	16 2( )	35,6%	7,55±2,29	34
	27 1( )	60,0%	15,97±3,53	29 2( )	64,4%	15,78±3,45	56
	45	100,0 %		45	100,0%		90

2.2. .2.2.

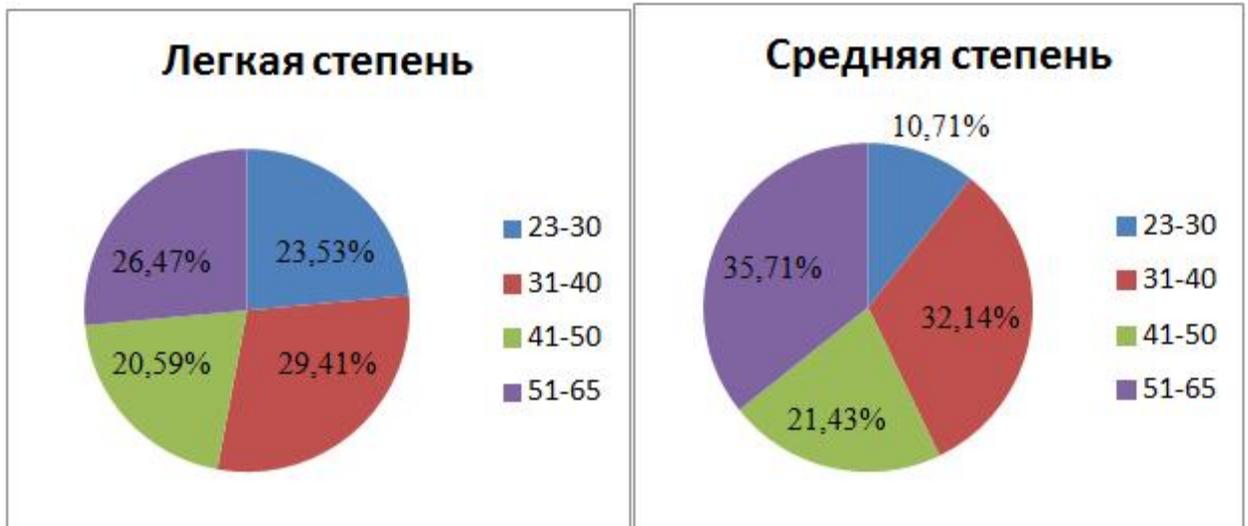
	n	23-30	%	31-40	%	41-50	%	51-65	%
1( ), 2( )	34	8	23,53%	10	29,41%	7	20,59%	9	26,47%
с 1( ), 2( )	56	6	10,71%	18	32,14%	12	21,43%	20	35,71%
	90	14	15,56%	28	31,11%	19	21,11%	29	32,22%

(90 .)

37,3±12,7 .

– 32,6±10,3

43,7±12,8.( . 2.2, . 2.2).



.2.2

(34 .)

1( ) (18 .) 2( ) (16 .)

13 (28,9 %) , PASI- 7,50±2,29.  
(56)

1( ) 2( )

1( ) 2( ) (34).

27 (48,3%),

« » , « » , 6(22,2%) -  
18(40,7%) ,

( ) ,

)

«

».

65(73,6%)

90

(1 2

44(67,6%).

2.3.

	:	1 n=45		2 n=45	
		.	%	.	%
1.		18	40,0	17	37,8
2.	( )	12	26,7	14	31,2
3.	( ) ,	5	11,1	6	13,4
4.	,	4	8,9	2	4,4
5.	,	2	4,4	3	6,7
6.		4	8,9	3	6,7
:		45	100	45	100

,  
 , -  
 - 18(40%) (1)  
 17(37,8%) - (2).  
 - 12(26,7%) 14 (31,2%)  
 (1) (2).  
 4(15,5%) .



.2.3

2.4.

2.4

	n=90					
	n=34		n=56		n=90	
	n	%	n	%	n	%
	3	8,9%	39	69,8%	42	46,7%
	31	91,1%	17	30,3%	48	53,3%
	0	0,0%	0	0,0%	0	0,0%
:	51	56,7%	39	43,3%	90	100,0%

2.4,

(90)

48 (53,3%)

,

42(46,7%)

.

31(91,2%)

,

,

- 39(69,8%).

2.5.

			C			
	n=34		n=56		n=90	
	.	%	.	%	.	%
1 2	23	67,6%	2	3,6	25	27,8
2 3	8	23,5%	15	26,7	23	31,3 %
-	3	8,9%	39	69,6%	42	41,1%
:	45	100%	56	100%	90	100%

2.5,

23 (67,6%)

1 2

- 39(69,6%)

22(48,9%)

23(51,1%)

15

25-30

- 86,2%.

	1		2			
	n=45		n=45		:	
	.	%	.	%	.	%
1 2	2	4,4%	1	2,2%	3	6,7 %
3 5	5	11,1%	7	15,6%	16	17,8%
6 10	7	15,6%	6	13,3%	13	14,4%
11 15	9	20,0%	8	17,7%	17	18,9%
15	22	48,9%	23	51,1 %	45	50,0%
:	45	100%	45	100%	90	100%

11-15 - 9(20,0%) (1)  
 8(17,7%) (2).

(90)  
 63(70,0%) , 40  
 - 38(42,2%) ( 2.7).

2.7

		n=34	n=56
1	2	3	4
-	32(35,6%)	11(32,3%)	21(37,5%)
:	29(32,2%)	6(17,6%)	23(41,0%)
	16(17,7%)	7( 20,5%)	9(16,1%)
:	10(11,1%)	5(14,7%)	5(8,9 %)
-	18(20,0%)	6(17,6 %)	12(21,4 %)
	11(12,2%)	5(14,7%)	6(10,7%)
	5(5,6%)	2(5,8%)	3(5,3%)

32 (35,6%), 29 (32,2%)  
 - 18(20%).  
 ,  
 - 21(37,5%),  
 23(41,3%), - 12(21,4%)  
 3(5,3%).



3.

- 173 / ,  
 , - pH-7,37 pH  
 -  
 300 / [82, 135].

: PASI (Psoriasis Area and Severity Index),  
 sPGA (static Physician Global Assessment),  
 ( ).

14 .

, , ,

1 45

, 27 , 18 1( )-

18(40%), PASI-7,55±2,29 1( )-

27(60,0%) PASI-15,78±3,45.

14 .

( 3.1)

50(55,6%), (90)

2-3 . 79(87,6%)

( - ),

30(37,8%)

49(62,1%) ( 3.1).

)

	.	%	.	%	.	%
n=90	40	44,4%	50	55,6%	79	87,8%
n=45 1	21	46,7%	24	53,3%	39	86,7%
n=45 2	19	42,2%	26	57,8%	40	88,9%

**1**

- 24(53,3%)

21(46,7%) – , ( –

) - 39(87,6%) ( 3.1).

**2** - -

24(53,2%) - 19(42,3%),

40(88,9%) .

### 3.1

PASI

### 3.2.

PASI	PASI		
		10	20
n=45( 1)	45	16 1( )	29 1( )
PASI mean±SD	12,42±3,84	7,55±2,29	15,78±3,45
PASI min	3,8	3,8	10,31
PASI max	19,6	9,87	19,6

: n – ; mean±SD–

12,42±3,84,

1( ) –PASI 15,78±3,4

1( ) - PASI 7,55 ± 2,29 .

10,0%

1( ) – PASI-15,78±3,45

27 (48,3%),

« », « »,

6(22,2%) -

18(40,7%)

( , . , , , , )  
 ,  
 ,  
 , .  
 10,0%.

- ,  
 8-9 , 26(57,8%)

14 ,  
 38 (84,3%)  
 . 78 (86,7%),

« »

(87,9%)

, , « ».

(PASI, sPGA, ) ( 3.3).

12,42±3,84

14

PASI  
 5,63±2,36

( PASI-63,4 ±6,23%), 2.2 (p<0,001).

**PASI**

1	mean±SD PASI	mean±SD PASI 14
n=45	12,42±3,84	5,63±2,36 p<0,001

: n - ; p - ; mean±SD-

**PASI**

1( ), 1( )

3.4. 3.1.

**PASI**

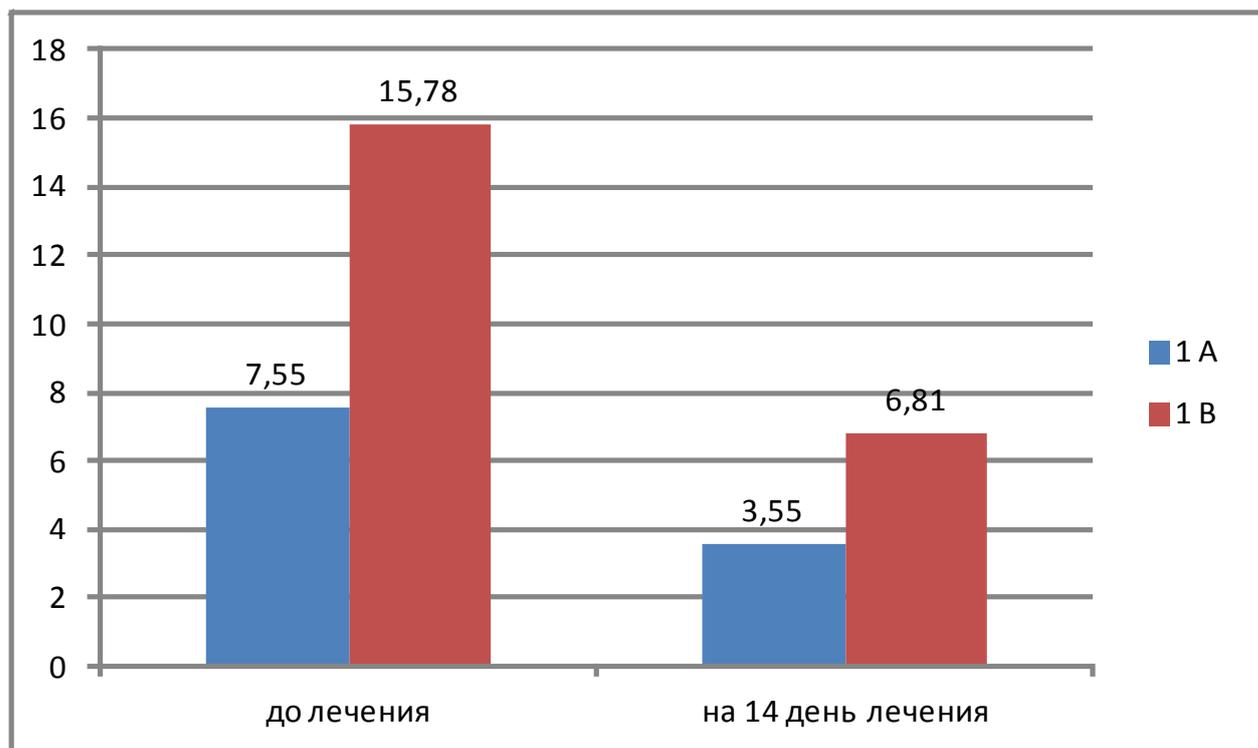
1 n=45	mean±SD PASI	mean±SD PASI 14
1( ) n=18	7,55±2,29	3,55±2,21
1( ) n=27	15,78±3,45 P<0,001; P1<0,01	6,81±2,56 P<0,001; P1<0,001

: n - ; - . mean±SD-

3.4,

1( ) PASI 7,55±2,29 , 14  
3,55±2,21, 2,1 , PASI-53,8±6,04%.

1( ) PASI 15,78±3,45  
6,81±2,56 2,1 , PASI - 54,01±5,26% .3.1.



. 3.1

PASI

(M±m).

sPGA

1 ( ) 1 ( )

3.5, 3.2.

3.5

sPGA

	mean ± SD sPGA	mean ± SD sPGA 14
1 ( ) n=18	3,17±1,02	2,27±1,68
1 ( ) n=27	4,13±1,52 P<0,05 P1<0,05	3,01±1,23 P<0,05 P1<0,05

: n-

, -

, 1 -

mean±SD -

3.5. 3.2.

1 ( )

sPGA

3,17±1,02

14

70

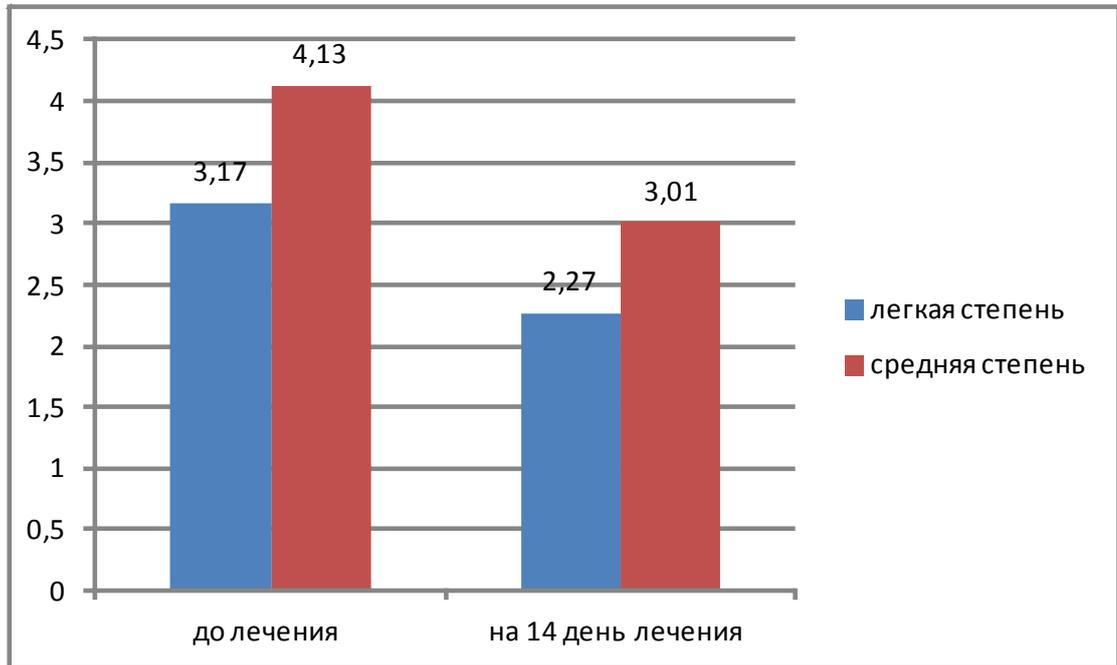
- 2,27±1,68,

29,1% (p<0,01).

1 ( )

sPGA с 4,13±1,52

3,01±1,23 , 26,8% (p<0,05).



. 3.2

sPGA

sPGA

1( )

1( ) (P<0,05).

3.6,

.3.3.

3.6

		%		%		%		%
1 (n=45)	12	26,67%	29	64,44%	4	8,89%	0	0,00%

3.6.,

14

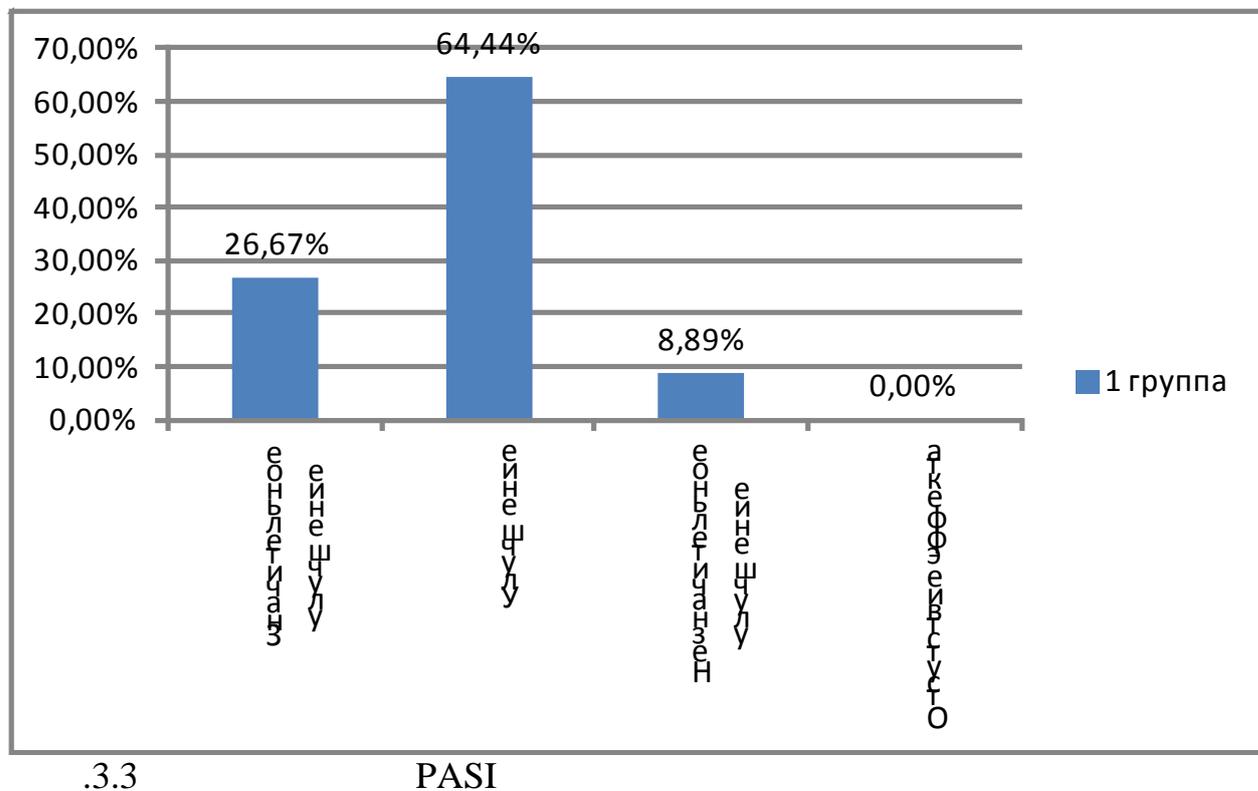
( 1)

PASI(75)

12 (26,67%)

PASI(50)

- 29(64,44%), (PASI-25) - 4(8,89%), PASI 55,6±4,2 % ( . 3.3).

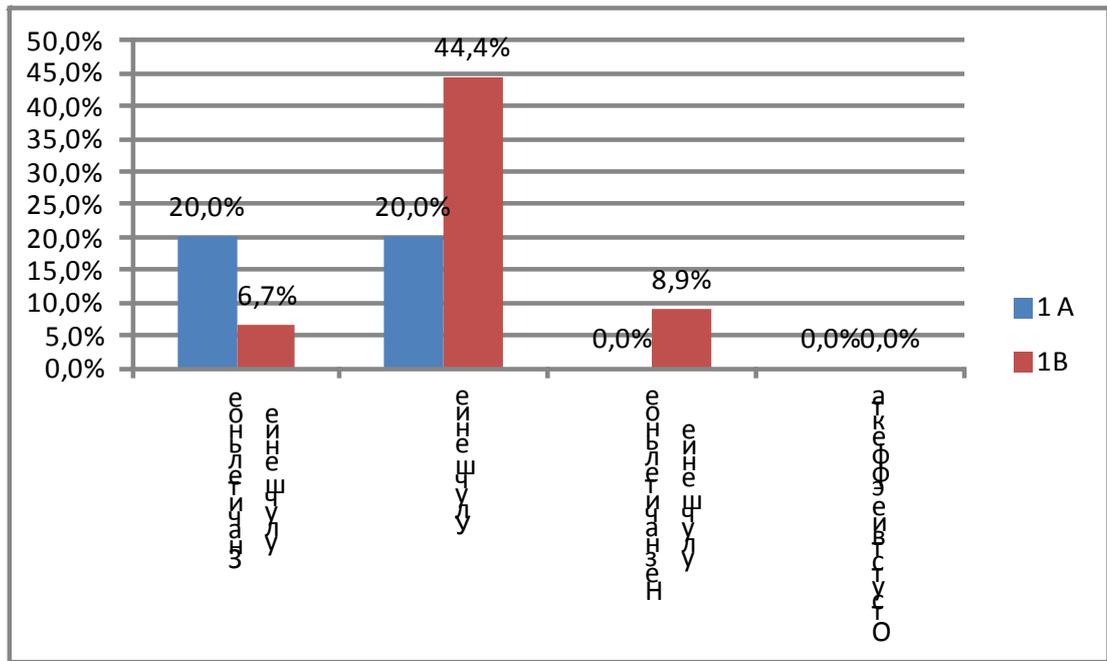


.3.3 PASI

1 ( ) - 1 ( ) ( 3.7, .3.4).

3.7

n=45								
		%		%		%	%	
1( ) n=18	9	20,0%	9	20,0%	0	0,0%	0	0,0%
1( ) n=27	3	6,7%	20	44,4%	4	8,9%	0	0,0%



.3.4 PASI

3.7, . 3.4. , 14  
 1(A)  
 PASI(75) 9 (20,0%)  
 PASI(50) 9(20,0%)  
 PASI(25)  
 1( ) PASI(75)  
 3(6,7%),  
 PASI(50) 20 (44,4%) , – PASI(25)  
 - 4(8,9%).

2- 3 – (24/45/53,2%),  
 - (39/45/87,6%)  
 21/45 (46,7%). ( 3.8).

**3.8**

**PASI**

1 n=45	21	24	39
	11,43±3,86	12,26±3,89	12,68±4,27
14 –	6,87±2,32	5,01±2,65	4,76±3,19
P	<0,001	<0,001	<0,001

:

**PASI**

( – )  
 -  
 PASI 12,68±4,27 4,76±3,19 2,8 , PASI 62,1±4,12%  
 12,36 ±3,89 5,01±2,65 2,5 , PASI 59,8±3,81% (p<0,001).

**PASI**

11,42±3,86 6,87±2,32, 1,7 , PASI-41,3±5,2% (p<0,001).

-

**3.9.**

1 n=45								
		%		%		%		%
n=39	12	26,7%	27	60,0%	0	0,0%	0	0,0%
n=21	9	20,0%	15	33,3%	0	0,0%	0	0,0%
n=24	3	6,7%	17	37,8%	4	8,9%	0	0,0%

3.9.

,

-

,

( - ),

- PASI(75) 12(26,7%), PASI(50) 27(60,0%)

PASI(75) - 9(20,0%) , PASI(50) 15(33,3%).

PASI(75) 3(6,7%), PASI(50) - 17(37,8%), PASI(25) 4(8,9%)

.

,

-

.

.3.10.

. (M±m)

1 n=45		
	n=18 1( )	n=27 1( )
	9,56±2,46	16,31±2,94 P<0,001
14	3,44±0,88 P1<0,001	6,17±1,47 P>0,05 P1<0,001

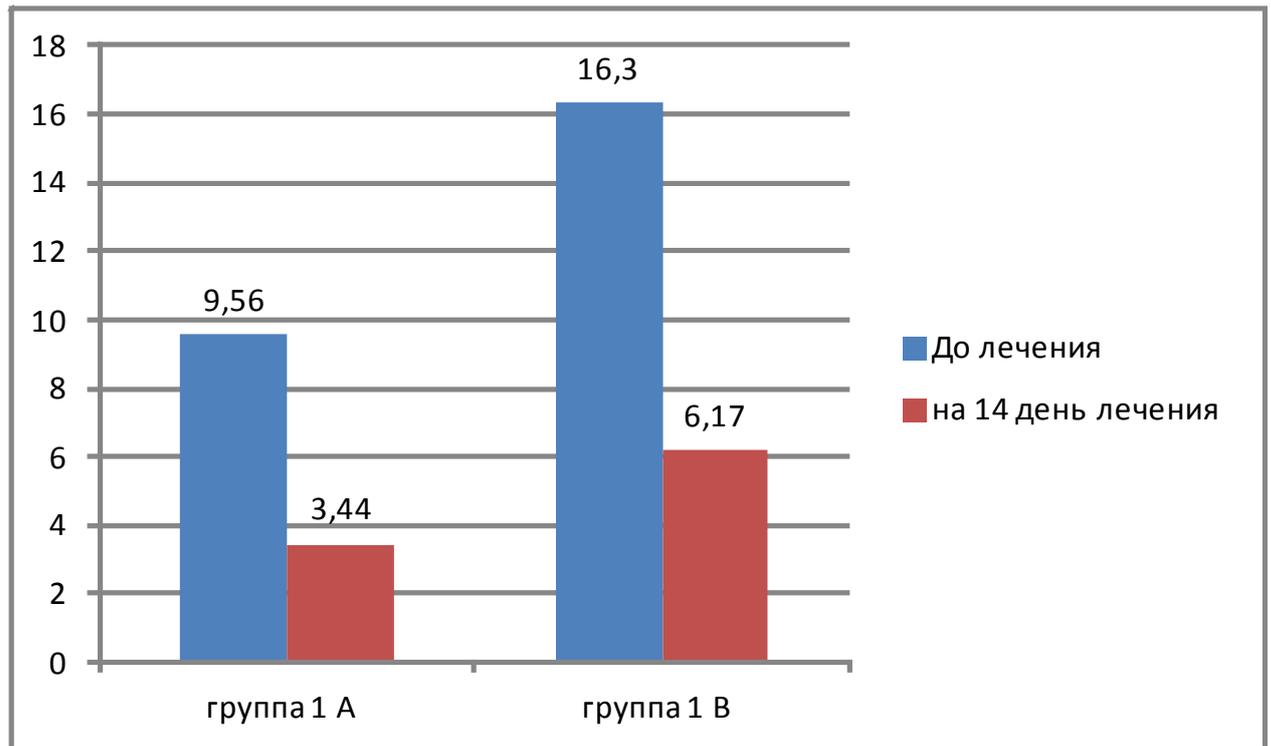
: -

, 1-

[154, 163].

- 45(100%).

14 1( )  
 3,44±0,43, (64,01±5,15%), 2 5 ,  
 , 1 ( ) 6,01±0,17 , (-54,6%),  
 ( .3.5).



. 3.5

. 3.5

1( ) 1( ).

(P&lt;0,001).

, PASI, sPGA,

45 (100 %)

PASI

с

## 3.2

: 1 2.

**1** 45  
 , 27 , 18 1( ) -  
 18(40%), PASI-7,55±2,29 1( ) -  
 27(60,0%) PASI-15,78±3,45.

14 .

**2** 45  
 , (21 24 )  
 2( ) PASI-7,43±1,16 16(35,5%),  
 2( ) PASI-15,78±3,45 29(64,4%%).

- - 600 30 .  
 14 , 14 -  
 (28 ).

, **2**

-

**1.**

89,7%

, ,

,

.

14

PASI

,  
( 3.11).

**PASI**

	mean±SD PASI	mean±SD PASI 14
1 n=45	12,42±3,84	5,63±2,36
2 n=45	12,07±3,53 P>0,05	4,02±2,61 P1<0,05

: n –

; p –

; mean±SD–

; 1-

( 3.11)

PASI

1 c 12,42±3,84

5,63 ±2,36 , PASI-54,6±3,45% (p&lt;0,05)

**2**

PASI

12,07±3,52,

4,02±2,61, PASI-67,6±5,34%. (P&lt;0,001).

3,

PASI

3,2 ,

**2** –**1** - 2,1 . (p<0,001).

,

2( )

( 3.12, .3.6).

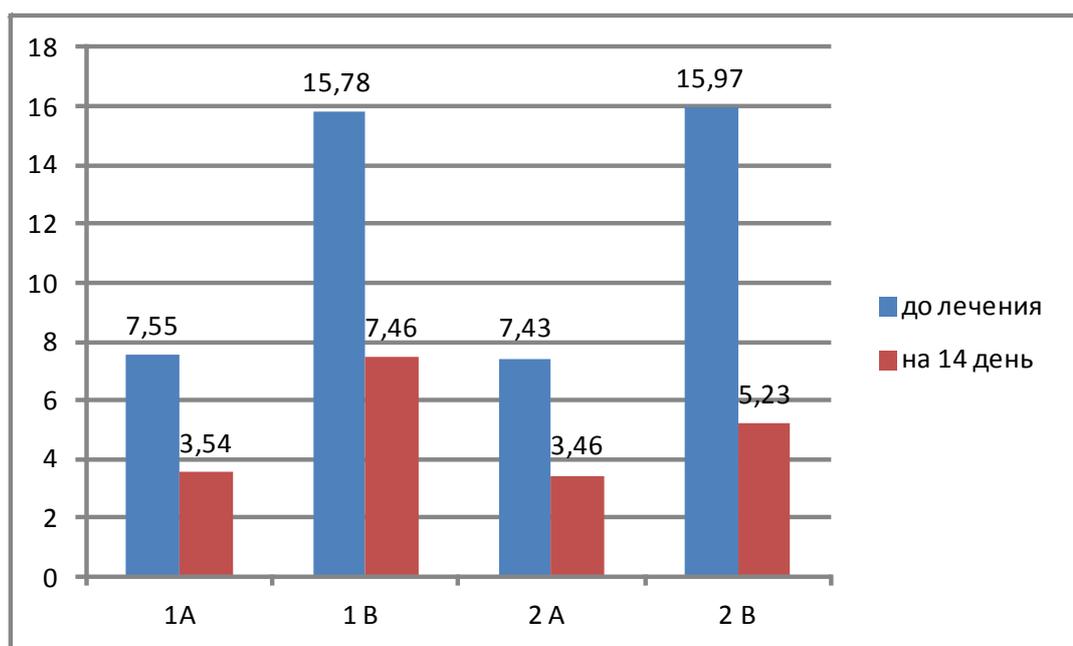
## PASI

. (M±m)

	( 1) n=45		+ ( 2) n=45	
	mean±SD PASI	mean±SD PASI	mean±SD PASI	mean±SD PASI
1( )2( )	7,55±2,29 n=18	3,54±1,22 1<0,001	7,43±1,16 n=16	3,46±2,21 1<0,01 P2>0,05
1( )2( )	15,78±3,45 n=27	7,46±2,56 2<0,001	15,97±3,53 n=29	5,23±2,32 2<0,001

: 1  
2

mean±SD-



.3.6

PASI

PASI

2 ( ),

15,97±3,53,

5,23±2,13

3,1

. PASI-67,7±3,45% (p&lt;0,001).

1( )

-

PASI

- 15,78±3,45,

-7,46±2,54

2,1

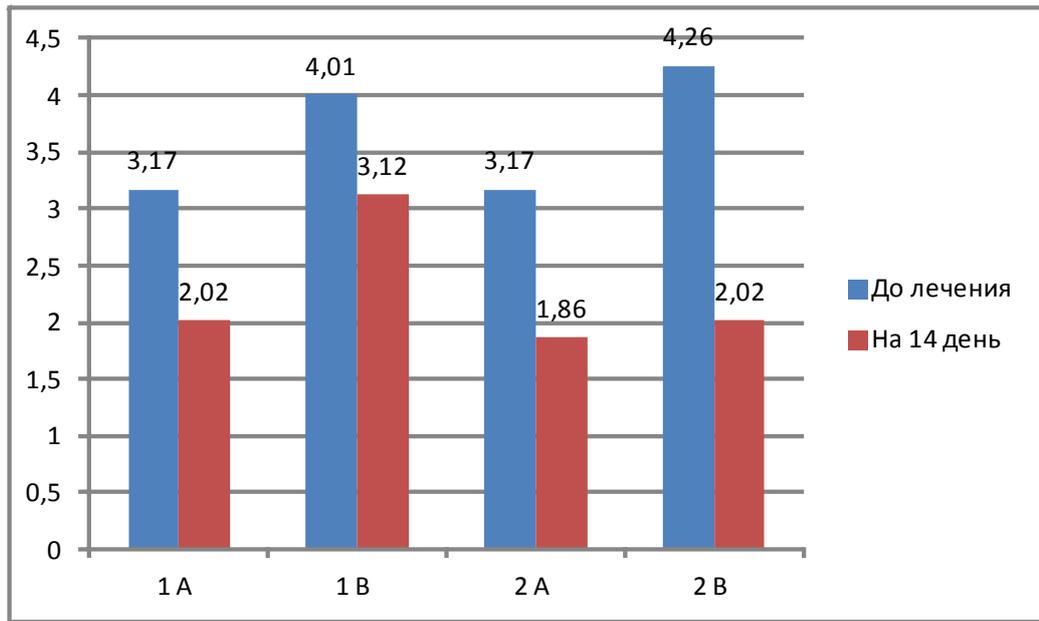
(P&lt;0,05), PASI-53,7±3,42% (p&lt;0,05).

, 1( ), 2( )  
 PASI

. PASI-53,1±5,2%, PASI-53,4±5,8% (p>0,05).

sPGA

( .3.7).



. 3.7

sPGA

. 3.7

( 2)

sPGA

2 ( ) 19,8% , 2 ( ) 32,5%

(p<0,05).

1 -

sPGA

1 ( )

13,4% ,

1( ) 18,3% (p<0,05). ( .3.7).

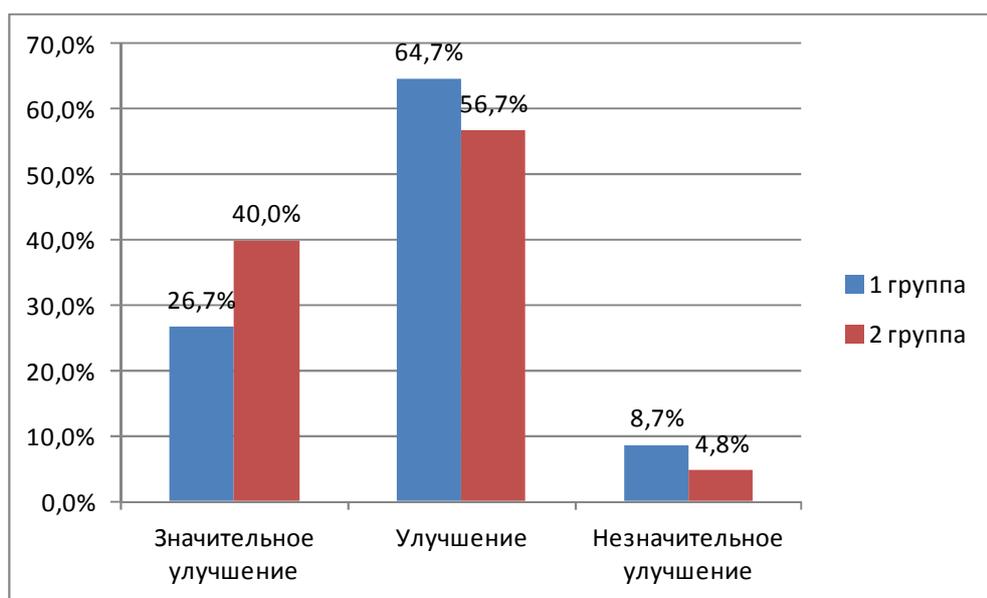
, 2 (4,5%)

:

3.13 .3.8.

3.13

		%		%		%		%
1 n=45	12	26,7%	29	64,4%	4	8,9%	0	0,0%
1( ) n=18	9	20,0%	9	20,0%	0	0,0%	0	0,0%
1( ) n=27	3	6,7%	20	44,4%	4	8,9%	0	0,0%
2 n=45	18	40,0%	25	55,6%	2	4,4%	0	0,0%
2( ) n=16	10	22,2%	6	13,3%	0	0,0%	0	0,0%
2( ) n=29	8	17,8%	19	42,2%	2	4,4%	0	0,0%



.3.8

PASI

3.13, .3.8 2  
 PASI(75) 18(40,0%)  
 1 - 12(26,6%) ;  
 PASI(50) 29(64,5%) 25(57,6%) -  
 ; PASI(25)  
 2 2(4,5%) 4(8,7%) 1.  
 2( ),  
 PASI(75) 8(17,8%) 3(6,7%) ,  
 PASI(50) - 20(46,7%) - 21(45,3%) ,  
 PASI(25) 2(4,5%) 4(8,9%) 1( ).  
 PASI 2  
 PASI-67,2±6,3%, PASI-56,7±5,7% 1 (p<0,05).

[ . ., 2006; . ., 2008; . ., 2007;  
 . ., 2009; Barclay L, 2012].

( 3.14).

**3.14**  
**(M±m)**

	1 (n=45)		2 (n=45)	
1( ) 2( )	8,23±1,16 n=18	3,60±1,62 1<0,001	7,87±1,48 n=16	3,46±2,21 1<0,001
1( ) 2( )	15,43±2,67 n=27	6,81±3,22 2<0,001	16,52±2,38 n=29	4,71±3,22 2<0,001

83

3.14

1( )

2( )

7,87±1,42

8,23±1,16

49,6

43,7% (

3,91±1,42

3,60±1,62),

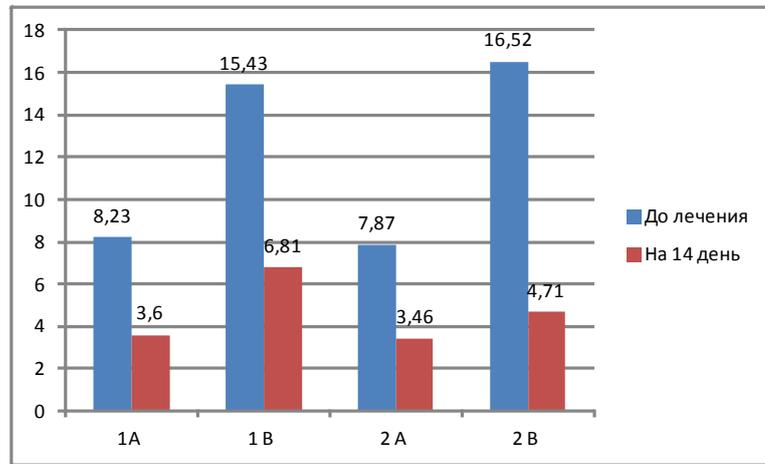
1( )

2( )

16,52±1,36

15,43±1,21

) .3.9.



.3.9

. 3.9

2( )

69,1%

4,87±1,24 (

1( ) -

44,1%

6,81±1,22

(

).

PASI, sPGA

( ) - 45(100%)

## 4.

## 4.1

-

-

-

[10, 24, 25, 66, 68, 70, 91, 125, 149].

,

.

90

1 (45 .)

1( ) (18 .),

1( ) (27 .)

2 (45 .)

2( ) (16 .),

2( ) (29 .)

- 30

.

1

2

. (P&gt;0,05)

( . 4.1).

-

**(M±m).**

	n=30	n=90	
		(1) n=45	(2) n=45
T (CD3 <sup>+</sup> ), %	70,35±1,43	46,57±1,27 P0<0,001	43,59±1,59 P0<0,001 P1>0,05
T (CD3 <sup>+</sup> CD4 <sup>+</sup> ),%	39,47±1,40	29,72±1,59 P0<0,001	28,41±1,39 P0<0,001 P1>0,05
(CD3 <sup>+</sup> CD8 <sup>+</sup> ),%	29,76±1,38	16,21±0,61 P0<0,05	15,23±0,75 P0<0,001 P1>0,05
( CD4 <sup>+</sup> /CD8 <sup>+</sup> )	1,36±0,10	2,08±0,20 P0<0,05	2,27±0,23 P0<0,05 P1>0,05
- (CD3+HLA-DR+),%	2,25±0,14	1,12±0,18 P0<0,001	1,33±0,21 P0<0,001 P1>0,05
NK (CD3+CD16+ D56+), %	11,44±0,72	8,15±0,58 P0<0,001	8,90±0,71 P0<0,05 P1>0,05
(CD3+CD16+CD56+), %	6,51±0,61	2,13±0,33 P0<0,001	2,75±0,38 P0<0,001 P1>0,05
B- (CD19 <sup>+</sup> ),%	12,73±0,68	8,98±0,44 P0<0,001	8,04±0,47 P0<0,05 P1>0,05

: P0-

; P1-

4.1

-

CD3<sup>+</sup>,

CD4<sup>+</sup>, CD8<sup>+</sup> T- , CD+HLA-DR+ -

(CD3+CD16+CD56+ ), - (CD19<sup>+</sup>)

. (P&lt;0,05).

CD3<sup>+</sup> - 24,3%

27,2%, - - 34,1%

36,7%, D8<sup>+</sup> - ,

46,7 48,6% (P<0,001),

CD4<sup>+</sup>/CD8<sup>+</sup> 2,08±0,20 2,27±0,23

. (P<0,05).

(CD3+HL-DR+) 51,2 51,3%, NK- (CD3- CD16+CD56+)

29,3% 23,6%, B- (CD19<sup>+</sup>) 29,2% 36,2% (P<0,05).

## 4.2

## 4.2

	n=30	(1)n=45		(2)	
		1( ) n=18	1(B) n=27	2(A) n=16	2(B) n=29
1	2	3	4	5	6
- (CD3 <sup>+</sup> ),%	70,35±1,43	58,18±1,42 P0<0,001	48,72±0,86 P0<0,001 P1<0,001	56,03±1,12 P0<0,001	49,72±2,14 P0<0,001 P1>0,05
- (CD3 <sup>+</sup> CD4 <sup>+</sup> ),%	39,47±1,40	31,54±1,53 P0<0,001	25,88±1,24 0<0,001 P1<0,01	32,53±2,43 P0<0,01	25,11±2,23 P0<0,001 P1>0,05
- (CD3+CD8+),%	29,76±1,38	26,68±2,18 P0<0,001	23,74±1,16 P0<0,001 1<0,05	27,68±2,03 P0<0,001	22,87±0,61 P0<0,001 P1>0,05
(CD4 <sup>+</sup> /CD8 <sup>+</sup> )	1,36±0,10	1,27±0,11 P0<0,001	1,02±0,07 0<0,001 1>0,05	1,26±0,11 P0<0,001	1,07±0,06 P0<0,001 P1>0,05

1	2	3	4	5	6
- (CD3+HLA- DR+),%	2,25±0,14	1,89±0,17 P0<0,001	1,41±0,13 P0<0,001 1>0,05	1,83±0,17 P0<0,001	1,54±0,18 P0<0,05 P1>0,05
NK- (CD3- CD16+56+), %	11,44±0,72	9,58±0,9 P0<0,001	8,35±0,74 P0<0,01 1>0,05	9,15±0,61 P0<0,001	8,68±0,54 P0<0,001 P1>0,05
-(CD3+ CD16+56+), %	6,51±0,61	3,07±0,23 P0<0,001	2,84±0,22 P0<0,001 1>0,05	3,07±0,21 P0<0,001	2,53±0,26 P0<0,001 P1>0,05
-( CD19+)	12,73±0,68	9,06±0,42 P0<0,001	8,79±0,18 P0<0,001 1>0,05	9,01±0,46 P0<0,001	8,17±0,21 P0<0,001 P1>0,05

: P0-

. P1—

4.2,

(CD3<sup>+</sup>)

- 1( ) 2( ) 28,73% 31,3%

20,1% 19,1 %

1( ) 2( )

( &lt;0,001).

(CD3<sup>+</sup>CD4<sup>+</sup>)

1( ) 2( )

34,5% 36,3%

1( )

2( ) (p&lt;0,001).

- -

1( ) 2( )

CD4<sup>+</sup>/CD8<sup>+</sup>

1,02±0,07 1,07,

1( ) 2( )

- 1,27±0,11 1,26±0,12 (P&lt;0,05).

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,

CD4<sup>+</sup>/CD8<sup>+</sup>),

Th1 Th2

[66, 68, 70, 91, 125, 172, 192, 201].

## 4.2

Th1 Th2

[67, 68, 70, 91, 125, 147, 183, 190, 218].

-1 , -2, -8, TNF-

-10

[17, 91, 125].

2 (45 .),

1( ) 2( ), 1( ) 2( )

(30

.),

4.3, 4.4.

90

1 (45 .)

( / )

(M±m)

/ml	1 n=45	2 n=45	n=30
-1	13,22±0,86 P1<0,001	13,78±0,63 P1<0,001 P0>0,05	3,40±0,22
-2	9,56±0,54 P1<0,001	9,18±0,56 P1<0,001 P0>0,05	5,27±0,34
-8	50,88±2,57 P1<0,001	52,64±2,52 P1<0,001 P0>0,05	31,32±2,28
TNF-	9,61±0,71 P1<0,001	10,48±0,33 P1<0,001 P0>0,05	1,71±0,18
-10	12,71±0,55 P1<0,001	11,53±0,49 P1<0,001 P0>0,05	6,67±0,56

: P1-

, P0-

4.3,

.  
 -1 , 3,8  
 , -2 1,8 , -8 1,6 , TNF- - 5,7 , -10 1,9  
 ( <0,001). 2 -1 4 , -2 1,7 , -8 1,7 , TNF- 6,1  
 ( <0,001).

1( ), 2( ), 1( ) 2( ).

4.4

. (M±m)

		1 (n=45)		2(n=45)	
		1( )	1( )	2( )	2( )
n	30	18	27	16	29
-1 , /	3,4±0,22	6,2±0,52 P0<0,001	17,3±1,6 P0<0,001 P1>0,05	6,7±0,54 P0<0,001	17,2±1,2 P0<0,001 P1<0,05
-2, /	5,27±0,34	7,1±0,66 P0<0,001	16,2±1,3 P0<0,001 P1<0,001	7,61±0,63 P0<0,001	15,4±1,6 P0<0,001 P1<0,001
-8, /	31,3±2,28	42,3±2,3 P0<0,001	60,3±4,7 P0<0,001 P1<0,001	38,3±3,2 P0<0,001	62,9±4,7 P0<0,001 P1>0,05
TNF- , /	1,71±0,18	7,3±0,22 P0<0,001	12,82±0,56 P0<0,001 P1<0,001	7,12±0,2 P0<0,001	13,7±0,63 P0<0,001 P1<0,001
-10, /	6,67±0,56	8,12±0,22 P0<0,001	25,8±0,41 P0<0,001 P1>0,05	8,2±0,42 P0<0,001	26,1±0,57 P0<0,001 P1>0,05

: 0-  
, 1-

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4.4,

1

-1 , -2, -8, TNF-

-10

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[4, 5, 17].

, -1

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-8,

[4, 10, 125, 187, 190].

-1 1( ) 1,5  
, 1( ) 3,5

2,5 1( ) ( <0,001).

-2, TNF-

- Th1(CD4<sup>+</sup>),  
[4, 10, 125, 179].

4.4,

1( ) 2( )

-2 2,3 2,5 3,32

1( ) 2( ) (p<0,001).

-8

- ,

[4, 91, 125].

-8

1( ) 2( ) 2,1 (p<0,001), 1,5 -

1,4

1( ) 2( ).(P<0,001).

NF-

, ,

.

TNF-

1( ) 2( ) 7,5

7,6

2,4 2,5

1( ) 2( ) ( <0,05 ).

-10

1( ) 2( ) 4,3 4,2

3,2 3

1( ) 2( ) ( <0,05).

-10

-1 , -2, -8, TNF-

,

[ . . . , 2011].

-10

4.5

.4.1.

4.5

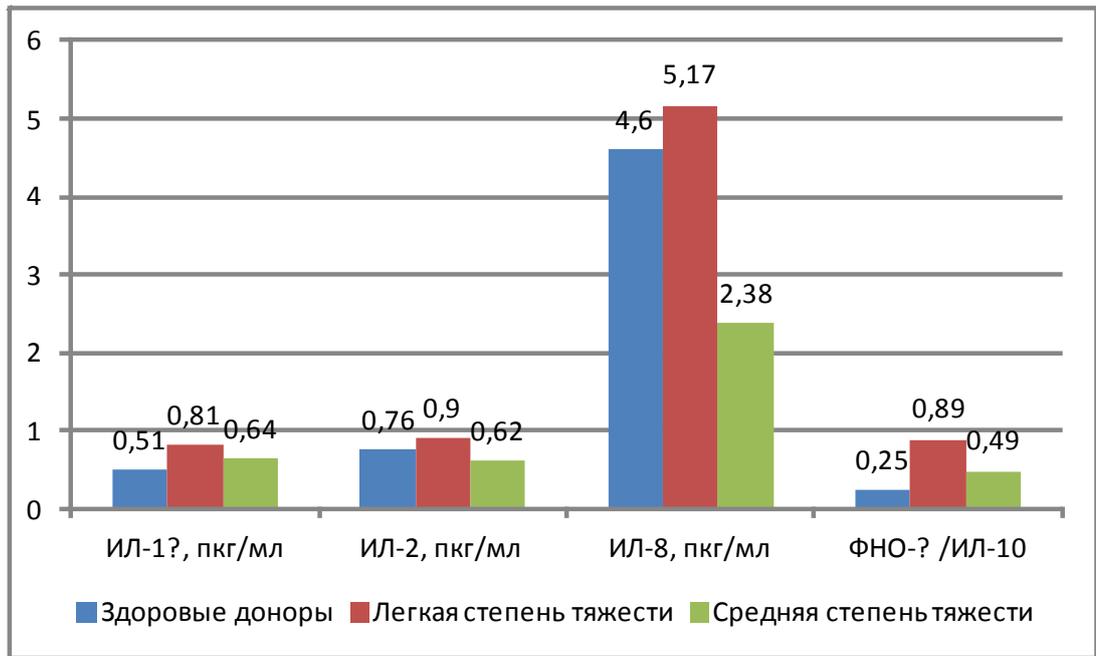
: -1 /

-10, -2/ -10, -8/ -10, TNF- / -10

	n=30	1( ) n=16	1( ) n=29
-1 / 10	0,51±0,22	0,81±0,79 P>0,05	0,64±0,25 P>0,05 P1>0,05
-2/ -10	0,76±0,02	0,90±0,66 P>0,05	0,62±0,22 P<0,001 P1>0,05
-8 / -10	4,6±0,18	5,17±0,34 P>0,05	2,38±0,4 P<0,001 P1>0,05
TNF- / -10	0,25±0,16	0,89±0,27 P>0,05	0,49±0,34 P>0,05 P1>0,05

: -

; 1 -.



. 4.1

TNF- / : -1 / -10, -2/ -10, -8/ -10, -10

4.5

1( )  
 -1/ -10, -2/ -10, -8  
 / -10 TNF- / -10, 0,81±0,79, 0,90±0,66, 5,17±0,34,  
 0,89±0,27 (p<0,001).

1( )

-2/ -10, -8/ -10 0,62±0,22 2,38±0,40

( <0,001),

-1, -8

-10.

- -1, -2, -8, TNF- -10,

Th0-

Th1,

Th2

[4, 10, 9, 147].

### 4.3

213]

10

20

2 - 10

-10

1( )

1( )

.4.2.

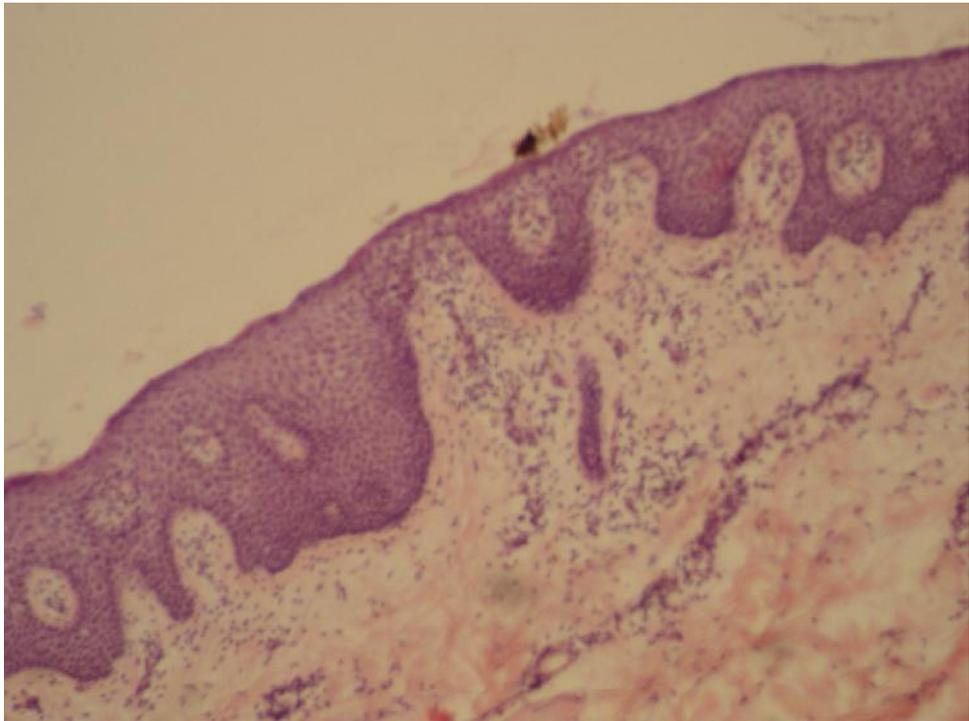
1( )

[67, 68, 127,

1 -

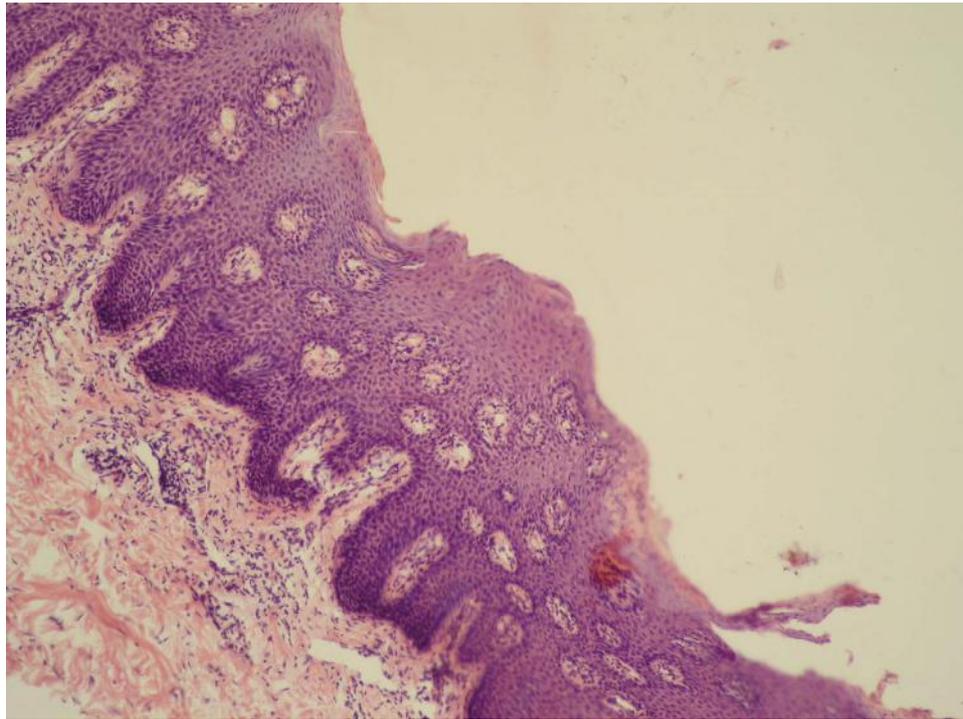
1( )

( .4.2).



.4.2

.4



.4.3

[120, 125, 219].

; CD4<sup>+</sup> - - ; CD3<sup>+</sup> - -  
 ; CD68 - - ; CD8<sup>+</sup> - -  
 CD4/CD8  
 0,93-0,96 [19, 47, 62, 150].

CD4/CD8 1,08±0,02 .  
 21,40±1,08 CD3 - , 11,1±0,02 CD4  
 - 10,30±1,05 CD8 - ( .  
 4.6).

1( ) 2( )

CD3<sup>+</sup> -

39,4±0,02

38,43±5,89

(P<0,01).

CD4<sup>+</sup> -

15,6±0,02

14,78±2,87,

CD8<sup>+</sup> -

23,8±0,02

23,47±3,89,

(P<0,01).

CD4<sup>+</sup>/CD8<sup>+</sup>

0,66±0,02

0,62±0,12,

(P<0,01) ( .4.4 .

4.6).

**4.6**

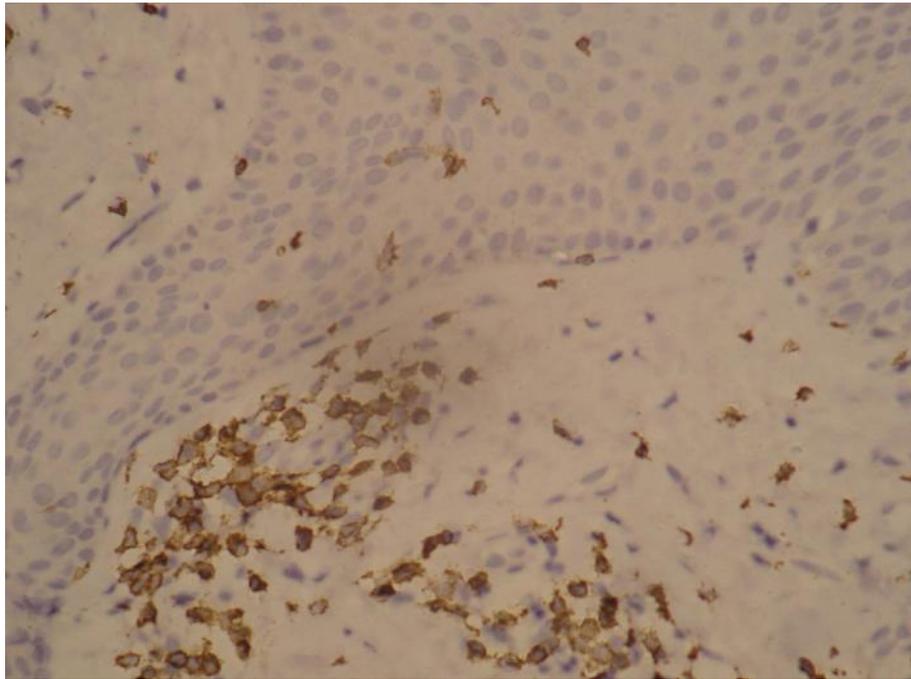
**CD3, CD4- CD8-**

**(M±m).**

	n=10	(1)n=10		(2)n=10	
		1( ) n=5	1(B) n=5	2(A) n=5	2(B) n=5
1	2	3	4	5	6
CD3	21,4±3,21	39,4±5,91 P<0,05	63,1±9,47 P<0,01 P1<0,01	38,43±5,89 p<0,05	62,3±8,7 P<0,01 P1<0,01
CD4	11,1±1,67	15,6±2,34 P<0,05	21,1±3,17 P<0,05 P1<0,01	14,78±2,87 p<0,05	20,61±2,89 p<0,01 p1<0,01
CD8	10,3±1,55	23,8±3,57 P<0,05	41,90±6,29 P<0,01 P1<0,01	23,47±3,89 P<0,05	41,13±5,27 P<0,01 P1<0,01
CD4/CD8	1,08±0,16	0,66±0,1 P<0,05	0,56±0,08 P<0,05 P1>0,05	0,62±0,12 P<0,05	0,52±0,06 P<0,05 P1>0,05

: -

; 1 -



.4.4

CD3 +  
FLEX.

.20 .

1( ) 2( )

3

63,1±9,47

62,3±8,7

( .4.5).

CD4<sup>+</sup> 21,1± 3,17 20,61±2,89

, CD8<sup>+</sup> 41,9±6,29

41,13±5,27,

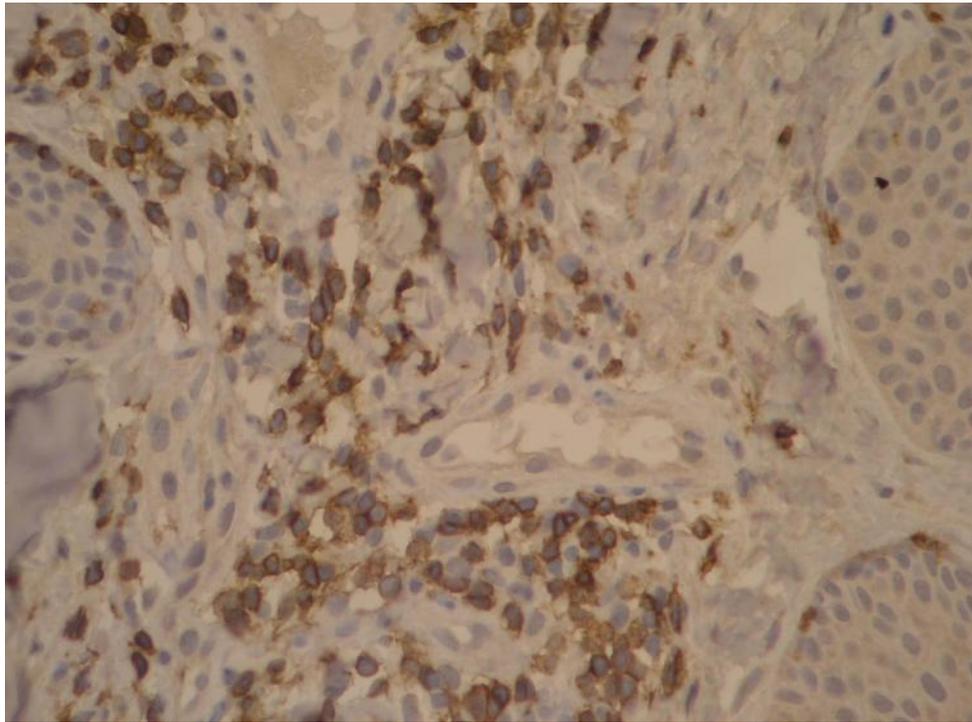
(P<0,01)

1( ) 2( ).

CD4/CD8

0,56±0,08.

(P>0,01) ( .4.5, .4.6).



.4.5

CD3 +  
FLEX.

.20 .

CD68 (Clone PG-M1, 1:50)

EnVision™ FLEX+, Mouse, High pH (Link), Code K8012

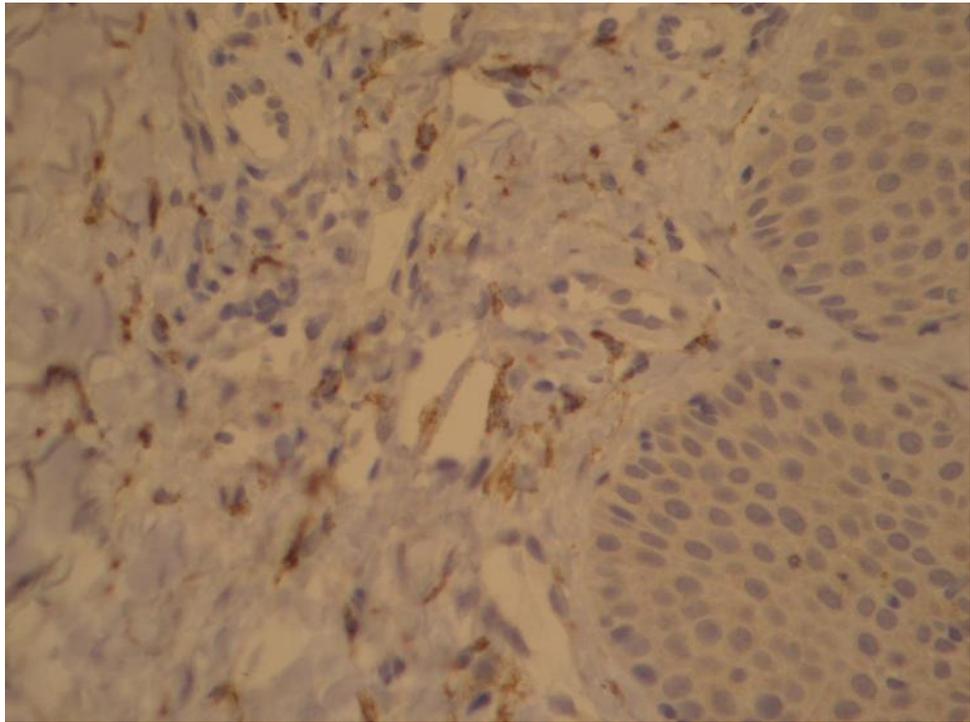
DAKO.

1( ) 2( )

CD68 -

CD68

12,90±1,94 12,13±1,23( .4.6, .4.7).



4.6

CD68+  
FLEX.

20

4.7

**CD68**

(M±m)

	n=10	1 n=10		2 n=10	
		1A n=5	1B n=5	2A n=5	2B n=5
CD68	8,4±1,26	12,9±1,94 P<0,05	13,3±1,73 P<0,05 P1>0,05	12,13±1,23 P<0,05	13,49±1,68 P<0,05 P>0,05

:

; 1 -

4.7

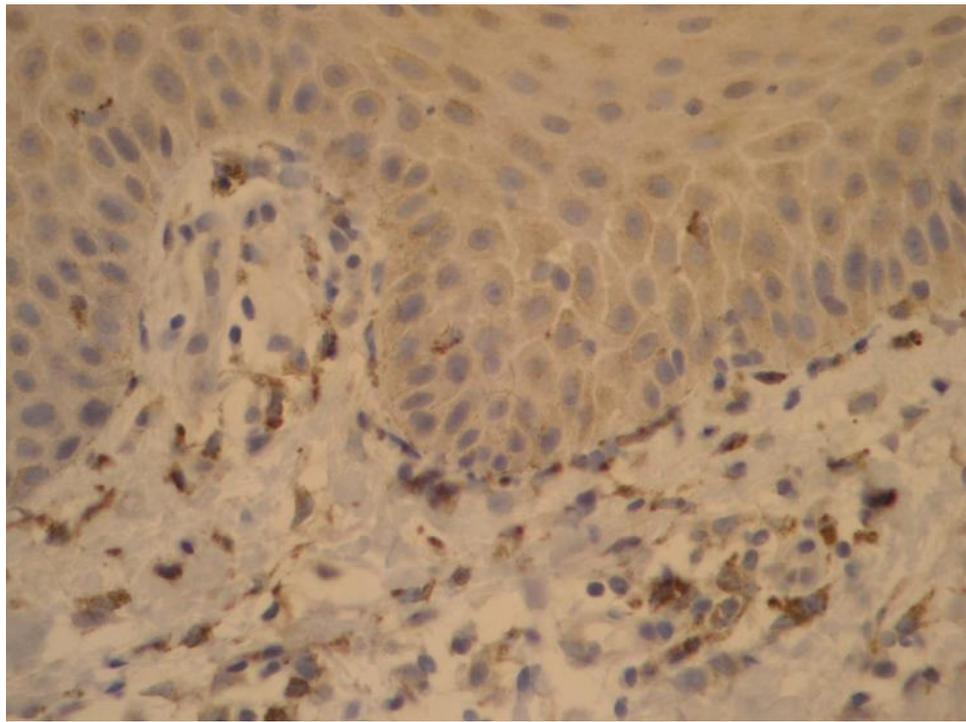
1( ) 2( ) CD68-  
13,30± 1,73 13,49±1,68,  
1( ) 2( ),

(8,40±1,26)

(P<0,01).

, 1( ) 2( )  
CD68

( . 4.7).



.4.7

CD68+  
FLEX.

20 .

TNF- , -1 -6

, TNF- -

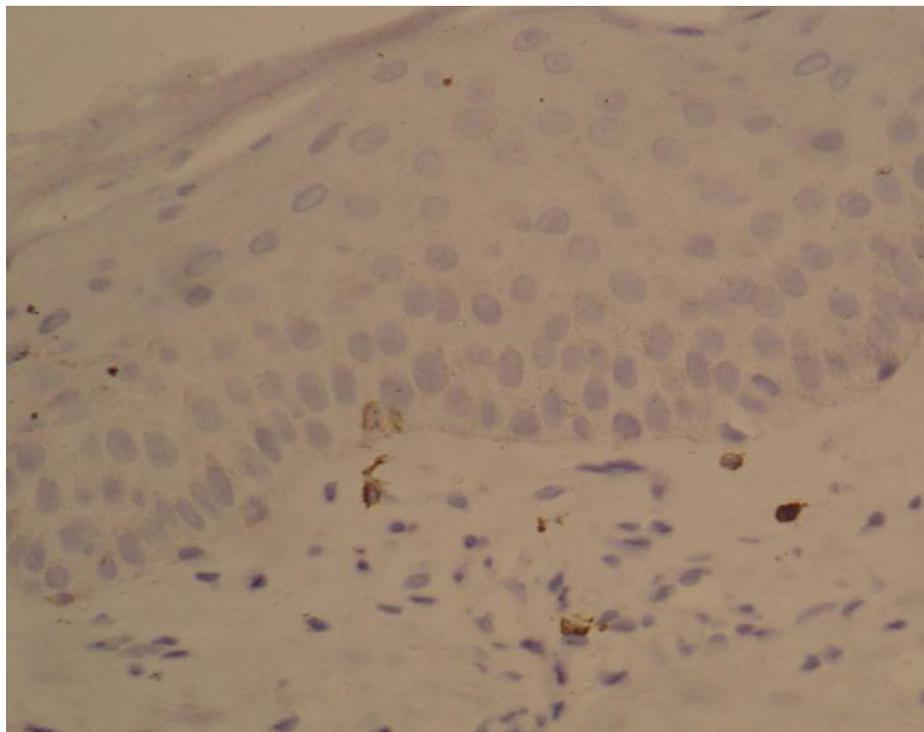
, - - , ,

; -1, -6; [125, 149, 218].

TNF-  
 2,70±0,42  
 6,57±0,10  
 ( .4.8, .4.8).

1( ) 2( )  
 2,60± 0,39  
 6,80±0,02  
 2( ),  
 (1,20±1,08)

TNF-  
 1( )  
 (P<0,01)



.4.8

TNF- ,

FLEX. .20 .

-1

-1

2,30±0,02

-1

1( ) 2( )

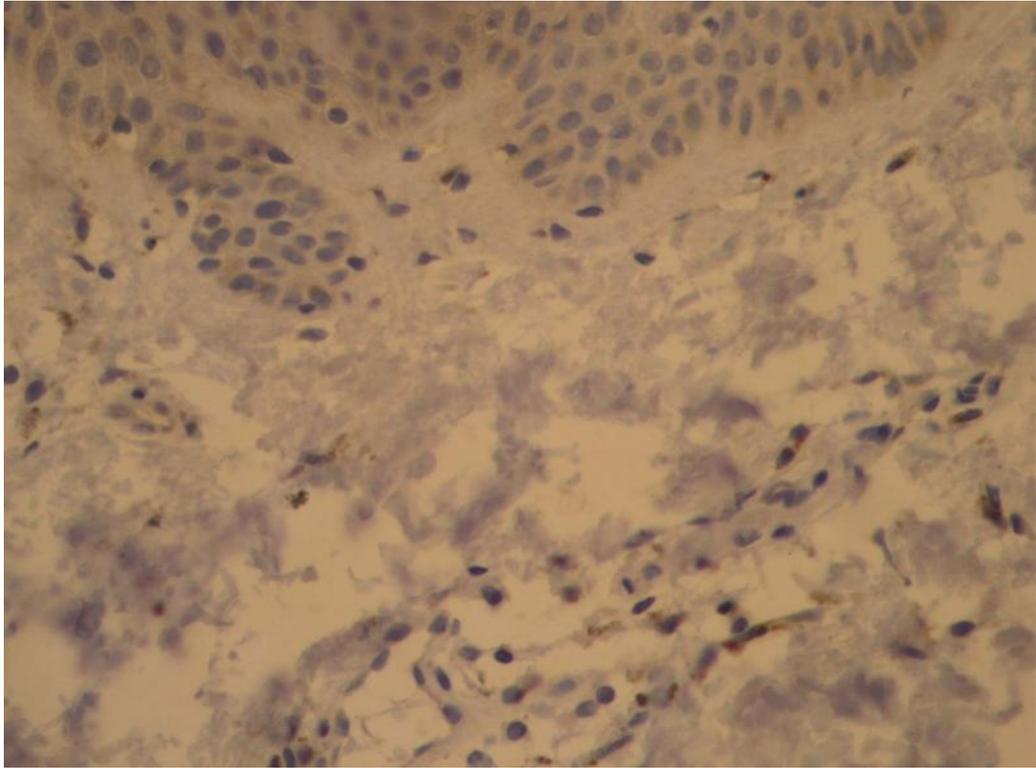
6,90±1,02

6,45±0,66

(0,80±0,12)

1( ) 2( ) (P<0,01) ( .

4.9, . 4.8).

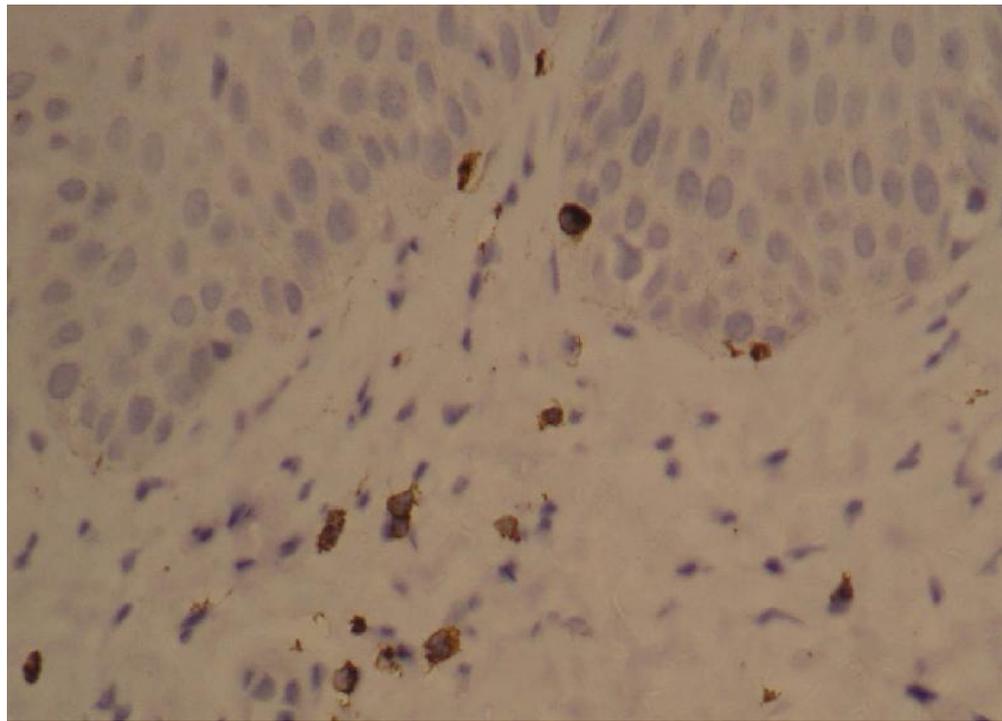


. 4.9

FLEX. . 20 .

-1,

-6. ( ., 4.10) ( . 4.8).



. 4.10

. FLEX. . 20 . 6,

4.8

TNF- , -1 -6

(M±m).

	n=10	1 n=10		2 n=10	
		1A n=5	1B n=5	2A n=5	2B n=5
TNF-	1,2±0,18	2,6±0,39 P<0,05	6,8±1,02 P<0,001 P1<0,001	2,70±0,42 P<0,05	6,57±0,10 P<0,01 P1<0,001
-1	0,8±0,12	2,3±0,35 P<0,01	6,9±1,04 P<0,001 P1<0,001	2,62±0,2 P<0,01	6,45±0,66 P<0,01 P1<0,001
-6	1,3±0,2	3,2±0,48 P<0,01	6,7±1,01 P<0,01 P1<0,001	3,17±0,36	6,24±1,14 P<0,01 P1<0,001

: P-

; 1-

1( ) 2( )

3,20±0,02    3,17±0,36

(P>0,05).

-6

1( )    2( )

6,70± 1,01    6,24±1,14

(1,30±0,2)

(P<0,01) ( . 4.10) ( . 4.8).

CD4<sup>+</sup>    CD8<sup>+</sup>

r=0,51 (p<0,05),

CD8<sup>+</sup>

r=0,46    r=0,47

, CD3<sup>+</sup>    CD8<sup>+</sup>  
(p<0,05) ( 4.9).

## PASI

	CD3 <sup>+</sup>	CD4 <sup>+</sup>	CD8 <sup>+</sup>	-1	TNF-	PASI	CD3 <sup>+</sup>	CD4 <sup>+</sup>	CD8 <sup>+</sup>	TNF-	-1
CD3 <sup>+</sup>	1	-0,0128	-0,1041	<b>0,4257</b>	0,207	-0,0634	<b>0,3992</b>	-0,2855	<b>0,4913</b>	<b>-0,5518</b>	<b>0,2809</b>
CD4 <sup>+</sup>	-0,0128	1	<b>0,5111</b>	-0,2394	-0,1654	0,2057	-0,1236	0,2004	-0,027	-0,2808	0,1583
CD8 <sup>+</sup>	-0,1041	<b>0,5111</b>	1	0,0196	-0,1854	0,2535	<b>0,4637</b>	0,0578	<b>0,4756</b>	0,0167	-0,2245
-1	<b>0,4257</b>	-0,2394	0,0196	1	-0,0305	<b>-0,4433</b>	-0,0551	-0,2644	0,1644	<b>0,4648</b>	<b>0,0921</b>
TNF-	0,207	-0,1654	-0,1854	-0,0305	1	-0,0432	<b>0,3537</b>	-0,3472	<b>0,4418</b>	-0,3892	0,5085
PASI	-0,0634	0,2057	0,2535	<b>0,4433</b>	-0,0432	1	<b>0,4881</b>	<b>-0,6065</b>	<b>0,4226</b>	0,0635	-0,1624
CD3 <sup>+</sup>	<b>0,3992</b>	-0,1236	<b>0,4637</b>	-0,0551	<b>0,3537</b>	<b>0,4881</b>	1	<b>-0,4127</b>	<b>0,9437</b>	-0,0049	0,0305
CD4 <sup>+</sup>	-0,2855	0,2004	0,0578	-0,2644	-0,3472	<b>-0,6065</b>	<b>-0,4127</b>	1	<b>-0,5283</b>	<b>0,426</b>	-0,0518
CD8 <sup>+</sup>	<b>0,4913</b>	-0,027	<b>0,4756</b>	0,1644	<b>0,4418</b>	<b>0,4226</b>	<b>0,9437</b>	-0,5283	1	-0,2293	0,1574
TNF-	<b>-0,5518</b>	<b>-0,3808</b>	0,0167	<b>0,4648</b>	-0,3892	0,0635	-0,0049	<b>-0,426</b>	<b>-0,2293</b>	1	-0,1075
-1	0,2809	0,1583	-0,2245	0,0921	<b>0,5085</b>	-0,1624	0,0305	-0,0518	0,1574	-0,1075	1

: Rs&gt;0,7

, Rs=0,7-0,5 –

, Rs=0,5-0,3 –

, Rs 0,3 –

TNF-  
 r=0,46, CD4<sup>+</sup>

CD3<sup>+</sup>,  
 r=0,42 (p<0,05).

-r=0,55,  
 -1

PASI

-1  
 CD8<sup>+</sup>

r=0,49 (p<0,05), CD3<sup>+</sup>  
 r=0,42 (p<0,05).

r=0,48(p<0,05), CD4<sup>+</sup>  
 CD4<sup>+</sup> (P<0,05).

r=-0,60,

CD3 - CD8 -  
 CD4/CD8, ,  
 TNF- , -1 , -6  
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- TNF- -6

-1 .

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[4, 66, 70, 92, 125].

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[20, 21. 193, 218].

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[37, 39, 40, 141, 199, 216,

217].

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**1**

2.

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( 2).

## 5.1

. ( 5.1.)

5.1

. (M+m)

	n=30	1 n=45		n=45	
			14		14
1	2	3	4	5	6
T (CD3 <sup>+</sup> ), %	70,35±1,43	58,59±3,66 P<0,001	61,5±1,68 P<0,001 P1>0,05	56,57±2,27 P<0,001	65,36±2,1 P<0,01 P1<0,01
T (CD3 <sup>+</sup> CD4 <sup>+</sup> ), %	39,47±1,40	28,41±1,39 P<0,001	30,45±1,56 P<0,001 P1>0,05	29,3±8,3 P>0,05	34,6±3,5 P<0,05 P1>0,05
(CD3 <sup>+</sup> CD8 <sup>+</sup> ), %	29,76±1,38	25,23±1,29 P<0,001	26,8±1,87 P<0,01 P1>0,05	25,21±6,4 P>0,05	28,39±6,42 P>0,05 P1>0,05
(CD4 <sup>+</sup> /CD8 <sup>+</sup> )	1,36±0,10	1,1±0,23 P>0,05	1,12±0,18 P<0,05 P1>0,05	1,08±0,76 P>0,05	1,32±0,18 P>0,05 P1<0,01
(CD3+HLA-DR+), %	2,25±0,14	1,33±0,21 P<0,001	1,61±0,22 P<0,001 P1>0,05	1,06±0,18 P<0,001	1,84±0,28 P<0,05 P1<0,01

1	2	3	4	5	6
NK (CD3 <sup>-</sup> CD16 <sup>+</sup> D56 <sup>+</sup> ), %	11,44±0,72	8,9±0,71 P<0,01	10,18±0,74 P<0,05 P1>0,05	8,15±0,58 P<0,001	10,03±0,61 P<0,01 P1<0,01
(CD3 <sup>+</sup> CD16 <sup>+</sup> CD56 <sup>+</sup> ),%	6,51±0,61	2,75±0,38 P<0,001	5,12±0,53 P<0,01 P1<0,001	2,13±0,33 P<0,001	4,89±1,27 P>0,05 P1<0,01
B- (CD19 <sup>+</sup> ),%	12,73±0,68	8,04±2,47 P<0,05	8,76±3,02 P<0,05 P1>0,05	8,98±3,13 P<0,05	10,96±2,17 P>0,05 P1>0,05

: P -

. P1 -

5.1.

14- - 1

(CD3<sup>+</sup>) 12,5%, - -

CD4<sup>+</sup> 11,9%, CD8<sup>+</sup> - 13,9 %

(P<0,05), (P< 0,05).

-

2 CD3<sup>+</sup> 26,3 %, - -

CD4<sup>+</sup> 22,3%, CD8<sup>+</sup> - 23,8%

(P<0,001).

(CD4<sup>+</sup>/CD8<sup>+</sup>) ( )

(p<0,05).

- ( D3+HLA-DR+),

NK(CD3+CD16+CD56+) 14

(P>0,05). B-

(CD19<sup>+</sup>), - 1

37,2% , ( P<0,001), 2

- 53,4% (P>0,05).

1( ) 2( ) 1( ), 2( )

5.2.

5.2

	n=30	1 n=45		2 n=45	
		n=18	n=27	n=16	n=29
1	2	3	4	5	6
T (CD3 <sup>+</sup> ), %	70,35±1,43	58,59±3,6 62,3±2,11 P<0,001 P1>0,05	48,54±3,68 51,54±2,43 P<0,001 P1>0,05	53,03±4,1 65,36±4,02 P<0,001 P1<0,01	47,36±2,14 60,5±1,6 P<0,001 P1<0,001
T (CD3 <sup>+</sup> CD4 <sup>+</sup> ), %	39,47±1,40	30,41±1,3 37,27±1,5 P<0,001 P1<0,001	24,45±1,56 26,5±2,3 P<0,001 P1>0,05	31,5±2,4 38,2±1,45 P<0,01 P1<0,01	25,41±3,5 34,6±2,45 P<0,001 P1<0,01
(CD3 <sup>+</sup> CD8 <sup>+</sup> ), %	29,76±1,38	26,23±1,2 29,3±2,4 P<0,001 P1>0,05	22,8±1,87 23,18±2,65 P<0,001 P1>0,05	28,21±6,8 30,3±2,6 P>0,05 P1>0,05	23,02±1,4 28,39±2,6 P<0,001 P1<0,01
(CD4 <sup>+</sup> /CD8 <sup>+</sup> )	1,36±0,10	1,12±0,23 1,34±0,56 P>0,05 P1>0,05	1,08±0,18 1,13±0,66 P<0,05 P1>0,05	1,18±0,76 1,41±0,24 P>0,05 P1>0,05	1,07±0,24 1,32±0,16 P>0,05 P1>0,05
(CD3+HLA-DR <sup>+</sup> ), %	2,25±0,14	1,73±0,21 2,01±0,03 P<0,01 P1>0,05	1,5±0,62 1,76±0,036 P>0,05 P1>0,05	1,84±0,18 1,96±0,24 P<0,01 P1>0,05	1,54±0,28 1,84±0,28 P<0,01 P1>0,05
NK (CD3 <sup>-</sup> CD16 <sup>+</sup> D56 <sup>+</sup> ), %	11,44±0,72	9,58±2,71 10,02±0,64 P>0,05 P1>0,05	8,35±1,54 9,74±1,83 P<0,05 P1>0,05	9,15±1,58 10,01±0,61 P>0,05 P1>0,05	8,68±1,68 10,98±0,54 P>0,05 P1>0,05

1	2	3	4	5	6
(CD3 <sup>+</sup> CD16 <sup>+</sup> CD56 <sup>+</sup> ),%	6,51±0,61	2,75±0,38 5,12±0,53 P<0,001 P1<0,001	2,53±1,37 4,71±1,02 P<0,01 P1>0,05	4,89±1,27 6,98±2,3 P>0,05 P1>0,05	2,13±0,55 5,53±2,32 P<0,001 P1<0,01
B-(CD19 <sup>+</sup> ),%	12,73±0,68	10,04±2,47 10,34±1,02 P>0,05 P1>0,05	8,76±1,02 10,68±1,46 P<0,01 P1>0,05	10,72±1,13 10,96±2,17 P>0,05 P1>0,05	9,43±1,51 11,67±1,87 P>0,05 P1>0,05

: P -

. P1 -

-

1( ) 2( )

CD3<sup>+</sup>, CD4<sup>+</sup> CD8<sup>+</sup>

62,3±2,1

65,36±4,0 (P<0,005)

(CD4<sup>+</sup>/CD8<sup>+</sup>)

1,34±0,56

1,41±0,24

(P<0,05).

2( )

-

CD3+

60,5±1,6,

23,6%, -

CD4<sup>+</sup>

34,6±2,4,

13,6%,

CD8<sup>+</sup>

28,39±2,6,

29,2%,

(CD4<sup>+</sup>/CD8<sup>+</sup>)

1,32±0,16,

29,1%

(P<0,001)

(P>0,05).

1( )

CD3<sup>+</sup>,

CD4<sup>+</sup>, CD8<sup>+</sup> -

(CD4<sup>+</sup>/CD8<sup>+</sup>)

23,1%

19,7%

2( ) (P<0,05).

,

-

- CD3<sup>+</sup>, CD4<sup>+</sup>, CD8<sup>+</sup>  
(CD4<sup>+</sup>/CD8<sup>+</sup>).

## 5.2

[4, 10, 66, 68, 70, 93, 125].

, Th1 - -1, -2,  
-8, TNF- -10.  
, (p>0,05) ( . 5.3).

		. (M± m)			
		1	-	2	-
			14		14
		n=30	n=45	n=45	n=45
-1	3,4±0,22	13,22±0,86 P<0,001	12,66±0,74 P<0,001 P1>0,05	13,78±0,63 P<0,001	8,4±0,31 P<0,001 P1<0,001
-2	5,27±0,34	9,56±0,56 P<0,001	8,09±0,67 P<0,001 P1>0,05	9,18±0,56 P<0,001	7,02±0,4 P>0,05 P1<0,001
-8	31,32±2,28	50,88±2,57 P<0,001	49,17±3,07 P<0,001 P1>0,05	52,64±2,52 P<0,001	45,83±2,1 P<0,01 P1<0,001
TNF-	1,71±0,18	9,61±0,72 P<0,001	7,03±0,82 P<0,001 P1>0,05	10,48±0,33 P<0,001	5,63±0,29 P>0,05 P1<0,001
-10	6,67±0,56	12,71±0,55 P<0,001	10,87±0,61 P<0,001 P1<0,05	11,53±0,49 P<0,001	8,03±0,57 P>0,05 P1<0,001

P -  
P1 -

1

: -2 23,2%, TNF- 14,2%, -10 24,2% (P>0,05).

-1 , -8

(p>0,05).

2

-

- -2 24,2%, -8 44,7%, -10 31,2%, TNF- 43,2% (p<0,001),

(p<0,001).

-1, TNF- -10 (P&lt;0, 05). .5.2.1.

5.4.

5.4

(M+m)

/	n=25	+		+	
		1, n=45		+	2, n=45
		1( )	1( )	2( )	2( )
	n=18	n=27	n=16	n=29	
-1	3,4±0,2	6,2±0,52 4,57±0,33 P1<0,001 P3<0,001	17,3±1,6 15,2±1,3 P1<0,001 P2<0,001 P3<0,05	6,7±0,54 4,34±0,22 P1<0,001 P3<0,001	17,2±1,2 13,62±0,86 P1<0,001 P2<0,001 P3<0,001
-2	5,27±0,3	7,1±0,6 6,57±0,56 P1<0,05 P3>0,05	16,2±1,3 13,76±0,63 P1<0,001 P2<0,001 P3<0,001	7,61±0,63 5,83±0,56 P1<0,001 P3<0,01	15,4±1,6 10,55±0,38 P1<0,001 P2>0,05 P3<0,001
-8	31,3±2,3	42,3±2,3 34,19±2,2 P1<0,05 P3>0,05	60,3±4,7 52,12±1,76 P1<0,01 P2<0,01 P3>0,05	38,3±3,2 33,5±1,77 P1<0,05 P3>0,05	62,9±4,7 48,07±1,76 P1<0,001 P2>0,05 P3<0,01
TNF-	1,71±0,18	7,32±0,22 3,32±0,18 P1<0,001 P3<0,001	12,82±0,56 7,03±0,16 P1<0,001 P2<0,001 P3<0,001	7,12±0,2 4,04±0,18 P1<0,001 P3<0,001	13,71±0,65 5,04±0,18 P1<0,001 P2>0,05 P3<0,001
-10	6,67±0,56	8,12±0,22 4,96±0,21 P1<0,01 P3<0,001	25,8±0,41 12,49±0,35 P1<0,001 P2<0,001 P3<0,001	8,2±0,42 5,69±0,56 P1>0,05 P3<0,05	26,1±0,57 10,49±0,32 P1<0,001 P2<0,001 P3<0,001

2- : - , 1- , 3- ; -

5.4 1 ( ),  
 -2 32,2%, TNF- 64,5%, -10  
 49,1% (p<0,001). -1 ,  
 -8, (p>0,05),  
 , - .  
 ( 2( ))  
 -1  
 18,1%; -2 46,1%; -10 69,3%; TNF- 68,2%;  
 , 1( ) 2( )  
 -2, -10, TNF- ,  
 - -1 -8 ,  
 . , , -  
 . (P<0,005).  
 -  
 ,  
 , -  
 .

5.5.

		1 n=45		2 n=45	
		1( )	1( )	2( )	2( )
		n=30	n=18	n=27	n=16
-1 / -10	0,51±0,22	0,81±0,79 0,92±0,62 P<0,05	0,64±0,25 1,21±0,36 P>0,05 P1>0,001	0,81±0,32 0,59±0,32 P<0,05	0,65±0,21 1,29±0,28 P>0,05 P1>0,001
-2/ 10	0,76±0,02	0,90±0,66 1,30±0,26 P>0,05	0,62±0,22 1,10±0,20 P<0,001 P1>0,001	0,93±0,23 1,02±0,19 P>0,05	0,60±0,02 0,90±0,12 P<0,001 P1>0,05
-8 / 10	4,6±0,18	5,17±0,34 2,72±0,28 P>0,05	2,38±0,4 4,02±0,22 P<0,001 P1>0,05	4,7±0,34 4,8±0,38 P>0,05	2,40±0,38 4,58±0,66 P<0,001 P1>0,05
TNF- / -10	0,25±0,16	0,89±0,27 0,66±0,34 P>0,05	0,50±0,34 0,56±0,26 P>0,05 P1>0,05	0,86±0,26 0,71±0,24 P>0,05	0,52±0,32 0,38±0,22 P>0,05 P1>0,05

: P- , 1 -

-1 / -10 1( )  
( <0,05),  
2( ) 0,59±0, 32  
( >0,05). -2/ -10  
2( ) 0,90±0,12 o  
(P>0,05), -8/ -10  
1( ) , 2( )  
( <0,001), TNF- / -10 1( )  
1( ) 0,66±0,34 0,71±0,24 ( <0,05)  
( <0,05), 2( )  
( <0,05).

-1, -2, -8, TNF- -10

5.3

20, 1 - 10

2 - 10

1( ) 2( ); : 2( ) 2( ).

-10 ..

14

1 2 14

5.1-5.3).

1( )

CD3, CD4 CD8 -

24,60±1,08, 13,8±2,0 20,90±1,08

.(P>0,05).

1( )

CD4 CD8 -

20,8±4,7 18,7±2,8 , (P<0,001),

.(P<0,05).

(CD4/CD8) 0,83±0,10

.(P<0,05).

2

**CD3, CD4- CD8-  
14**

**. (M±m)**

	n=10	(1) n=10		(2) n=10	
		1( )n=5	1( )n=5	2( ) n=5	2( ) n=5
CD3 <sup>+</sup>	21,4±3,21	39,4±5,91 24,6±3,69 P<0,05	63,1±9,4 31,8±4,7 P<0,01	38,43±5,89 21,9±3,29 P1<0,05	62,3±8,7 26,5±3,98 P<0,05 P1<0,05
CD4 <sup>+</sup>	11,1±1,67	15,6±2,34 13,8±2,02 P>0,05	21,1±3,17 20,8±4,7 P<0,05	14,78±2,87 11,5±1,73 P1>0,050	20,61±2,89 13,5±2,03 P>0,05 P1>0,05
CD8 <sup>+</sup>	10,3±1,55	23,8±3,5 12,7±1,91 P1<0,05 P<0,01	41,9±6,29 18,7±2,81 P<0,01	23,47±3,89 10,9±1,64 P1<0,01	41,13±5,27 13,9±2,01 P<0,01 P1>0,05
CD4 <sup>+</sup> /CD8 <sup>+</sup>	1,08±0,16	0,66±0,1 1,08±0,12 P<0,05	0,56±0,07 0,83±0,11 P<0,05	0,62±0,12 1,05±0,16 P1<0,0	0,52±0,06 0,97±0,10 P>0,05 P1>0,05

: -

; 1

5.6

2( )

CD3 -

- 26,50±1,08,

CD4 CD8 -

13,3±2,03 13,9±2,01,

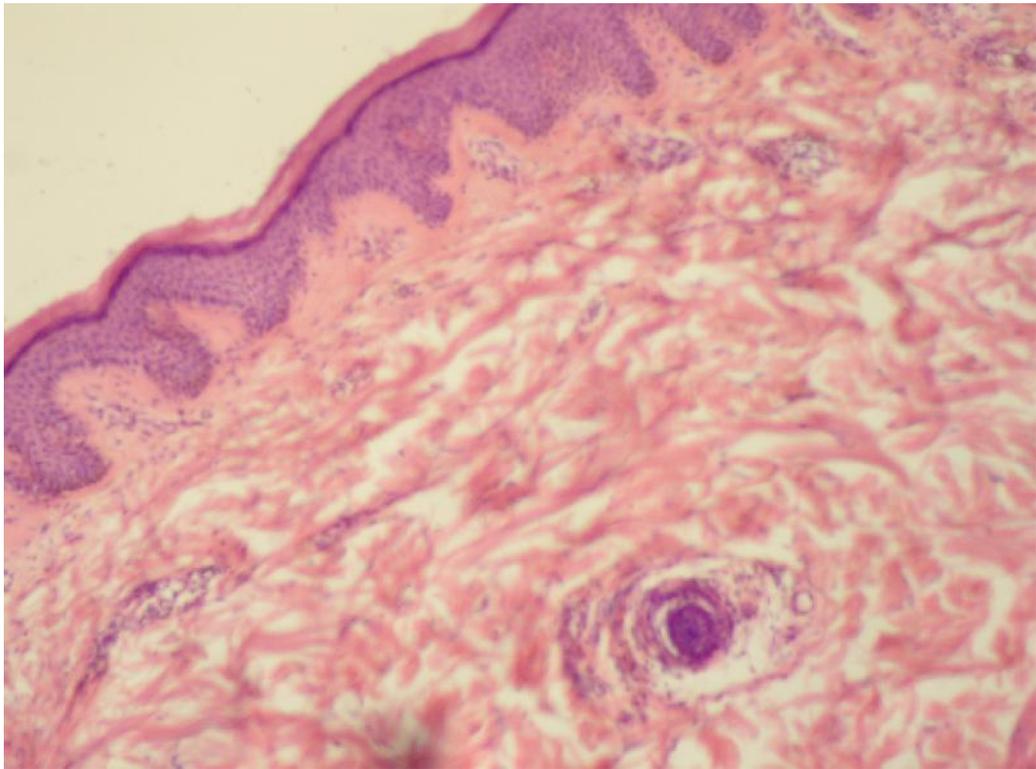
(CD4/CD8) 1,08±0,02

(P>0,05).

1( ) 2( )

1( ) 2( )

(5.1, 5.2, 5.3)

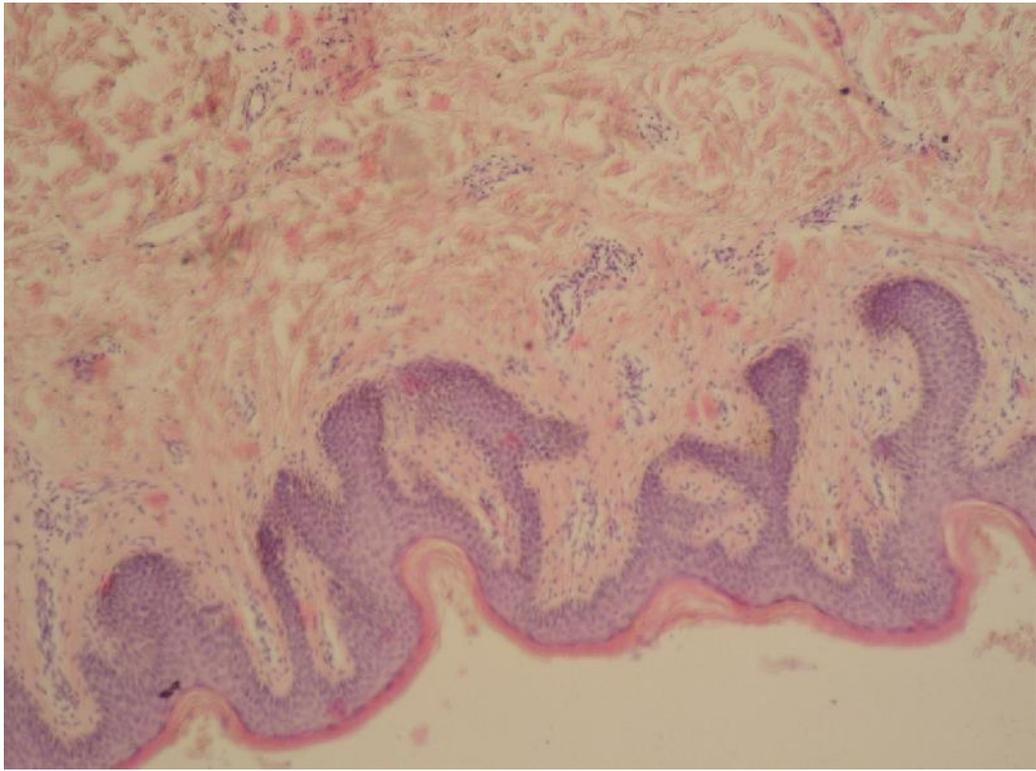


.5.1

1( ) 2( )

14

4



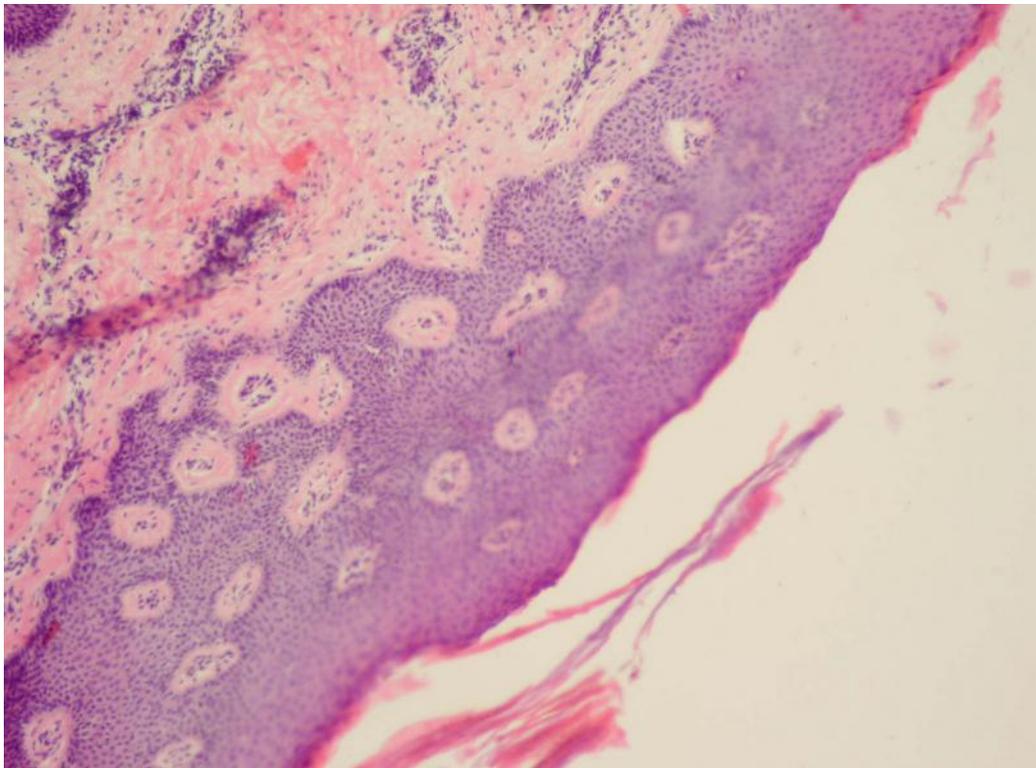
.5.2

14

2( ).

,

. 4



.5.3

14

1( ).

,

. 20

14

CD68 .

1( ) 2( )

CD68

10,60±0,02 9,50±0,02 ( . 5.7).

5.7

CD68

14

		1 n=20		2 n=20	
		1( )n=10	1( )n=10	2( )n=10	2( )n=10
CD68	8,4±1,26	12,9±1,94	13,3±1,73	12,13±1,23	13,49±1,68
		10,6±1,59	10,9±1,64	9,50±1,425	9,8±1,47
		P<0,05	P<0,05	P<0,05	P<0,05
		P1>0,05	P1>0,05	P1>0,05	P1>0,05

: - ; P1-

1( ) 2( ),

1( ) - 10,9±1,64

2( ) - 9,80± 0,02 (P>0,05).

14

1( ) 1( ) ,

2( ) 2( )

TNF-

TNF-

1( )

1( ) 0,90±0,10, 10,9±1,64,

2( ) -

0,63±0,09

(P<0,001).

-1

1( ) ,

1( ) 2( ) 2( ) 14

(0,80±0,02)

(P<0,01) ( .5.7).

-6 ( .5.8)

5.8

TNF- , -1 -6

. (M±m)

	n=10	1		2	
		1( ) n=10	1( ) n=10	2( ) n=10	2( ) n=10
TNF-	1,2±0,18	2,62±0,39 0,90±0,14 P<0,05 P1>0,05	6,8±1,02 0,87±0,13 P<0,001 P1>0,05	2,70±0,42 0,79±0,12 P<0,001 P1>0,05	6,57±0,10 0,63±0,09 p<0,001 P1<0,05
- 1	0,8±0,12	2,32±0,35 0,56±0,08 P<0,001 P1>0,05	6,9±1,04 0,52±0,08 P<0,001 P1>0,05	2,62±0,24 0,42±0,06 P<0,001 P1<0,05	6,45±0,66 0,38±0,06 P<0,001 P1<0,05
- 6	1,3±0,2	3,2±0,48 1,10±0,17 P<0,001 P1>0,05	6,7±1,01 1,2±0,15 P1>0,05 P<0,001	3,17±0,36 0,9±0,14 P<0,001 P1>0,05	6,24±1,12 0,82±0,10 P<0,001 P1>0,05

P1- : -

PASI

PASI

5.9

α	PASI						(1)					
	CD3+	CD4+	CD8+	-1	TNF-	PASI	CD3+	CD4+	CD8+	TNF-	-1	
CD3+	1α	<b>0,9021</b>	<b>0,4898</b>	<b>-0,2441</b>	0,0925	-0,0698	0,1664	0,2394	0,2051	-0,2499	0,0221	
CD4+	<b>0,9021</b>	1α	0,7494	-0,2001	0,0212	-0,1858	-0,1236	<b>0,2004</b>	-0,027	<b>-0,2808</b>	0,1583	
CD8+	<b>0,4898</b>	<b>0,7494</b>	1α	-0,0369	0,0956	-0,2842	<b>-0,5587</b>	0,2631	<b>-0,4553</b>	<b>-0,2223</b>	<b>0,3675</b>	
-1	<b>-0,2441</b>	<b>-0,2001</b>	-0,0369	1α	0,2217	<b>0,3281</b>	-0,1605	<b>-0,582</b>	0,0562	<b>-0,761</b>	0,0131	
TNF-	0,0925	0,0212	0,0956	<b>0,2217</b>	1α	0,2534	-0,1151	0,1487	0,0409	<b>-0,3109</b>	-0,0026	
PASI	-0,0698	-0,1858	<b>-0,2842</b>	<b>0,3281</b>	<b>0,2534</b>	1α	<b>-0,203</b>	<b>0,217</b>	-0,1615	<b>-0,2675</b>	<b>-0,7072</b>	
CD3+	0,1664	-0,1236	<b>-0,5587</b>	-0,1605	-0,1151	-0,203	1α	<b>-0,4127</b>	<b>0,9437</b>	-0,0049	0,0305	
CD4+	<b>0,2394</b>	0,2004	0,2631	-0,582	0,1487	<b>0,217</b>	<b>-0,4127</b>	1α	<b>-0,5283</b>	<b>0,426</b>	-0,0518	
CD8+	0,2051	-0,027	<b>-0,4553</b>	0,0562	0,0409	-0,1615	<b>0,9437</b>	<b>-0,5283</b>	1α	<b>-0,2293</b>	0,1574	
TNF-	<b>-0,2499</b>	<b>-0,2808</b>	-0,2223	<b>-0,761</b>	<b>-0,3109</b>	<b>-0,2675</b>	-0,0049	<b>0,426</b>	<b>-0,2293</b>	1α	-0,1075	
-1	0,0221	0,1583	0,3675	0,0131	-0,0026	<b>-0,7072</b>	0,0305	-0,0518	0,1574	-0,1075	1α	

: Rs&gt;0,7

, Rs=0,7-0,5 –

, Rs=0,5-0,3 –

.

## 5.10.

	PASI					(2)					
	CD3+	CD4+	CD8+	-1	TNF $\alpha$	PASI	CD3+	CD4+	CD8+	TNF-	-1
CD3+	1,000	<b>0,444</b>	<b>-0,397</b>	<b>-0,396</b>	0,141	0,216	-0,194	0,224	<b>-0,519</b>	-0,551	-0,039
CD4+	<b>0,444</b>	1,000	0,033	0,263	-0,034	0,005	-0,192	0,522	-0,267	0,150	0,051
CD8+	<b>-0,397</b>	0,033	1,000	0,190	<b>-0,321</b>	0,186	0,033	<b>0,628</b>	<b>0,365</b>	0,316	-0,170
-1	<b>-0,396</b>	0,263	0,190	1,000	<b>0,352</b>	0,024	0,153	-0,139	0,219	0,447	0,276
TNF-	0,141	-0,034	-0,321	<b>0,352</b>	1,000	<b>-0,362</b>	0,059	<b>-0,356</b>	0,099	-0,302	0,411
PASI	0,216	0,005	0,186	0,024	<b>-0,362</b>	1,000	<b>0,496</b>	0,229	0,024	-0,208	-0,071
CD3+	-0,194	-0,192	0,033	0,153	0,059	<b>0,496</b>	1,000	-0,327	0,780	0,057	0,432
CD4+	0,224	<b>0,522</b>	<b>0,628</b>	-0,139	<b>-0,356</b>	0,229	<b>-0,327</b>	1,000	-0,283	-0,071	-0,328
CD8+	<b>-0,519</b>	-0,267	0,365	0,219	0,099	0,024	<b>0,780</b>	-0,283	1,000	0,359	0,352
TNF-	<b>-0,551</b>	0,150	0,316	<b>0,447</b>	-0,302	-0,208	0,057	-0,071	0,359	1,000	0,043
-1	-0,039	0,051	-0,170	0,276	0,411	-0,071	0,432	-0,328	0,352	0,043	1,000

: Rs&gt;0,7

, Rs=0,7-0,5 -

, Rs=0,5-0,3 -

5.9.

CD3<sup>+</sup>,

CD4<sup>+</sup>, CD8<sup>+</sup> TNF- (r=-0,11, P>0,05),

CD8<sup>+</sup> CD4<sup>+</sup>, CD3<sup>+</sup> .

PASI CD3<sup>+</sup>, CD4<sup>+</sup>,

CD8<sup>+</sup> TNF- .

,

,

,

( 5.10.)

-

-

. 5.4

:

PASI, sPGA, ,

CD3<sup>+</sup>, CD4<sup>+</sup>, CD8<sup>+</sup>, CD4<sup>+</sup>/CD8<sup>+</sup> - -

-1, -2, -8, TNF- , -10 .

.5.4.,

-

- (PASI, sPGA, ).

PASI<10, sPGA<3, <10

,

- 14

14

, .

PASI>10, sPGA >3, >10

,

- 14

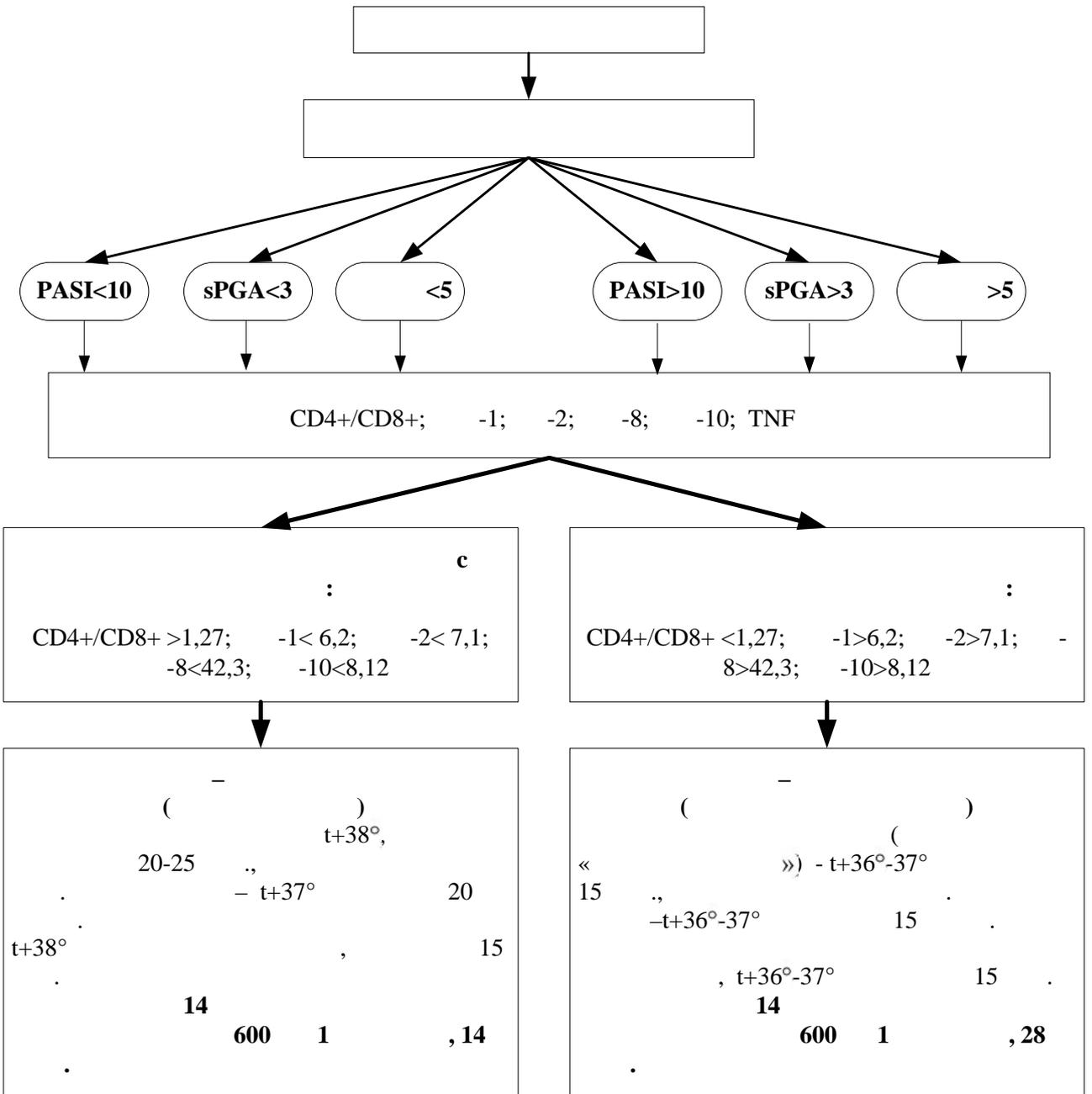
. - 28

(14

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14

).



. 5.4.

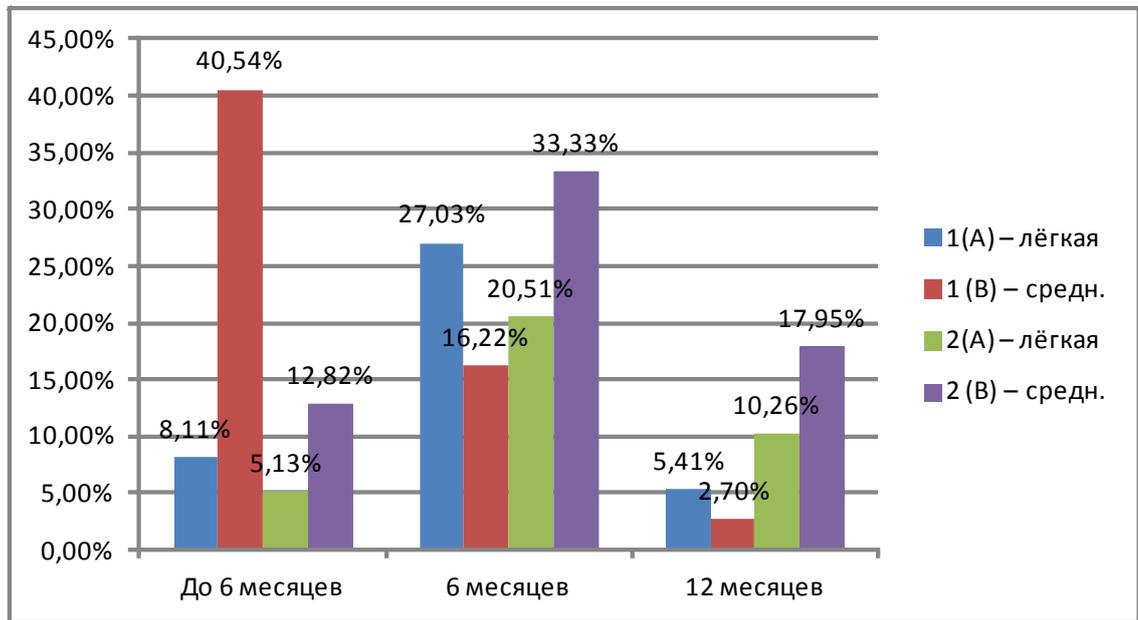
5.11

. 5.5

1

2

	n=76	6		6		12	
		. %	%	. %	%	. %	%
1( ) –	15	3	8,11%	10	27,03%	2	5,41%
1( ) –	22	15	40,54%	6	16,22%	1	2,70%
2( ) –	14	2	5,13%	8	20,51%	4	10,26%
2( ) –	25	5	12,82%	13	33,33%	7	17,95%



5.5

6 1( ) - 27,03%

1( ) - 16,22%

2( ) 6 20,51%

2( )-33,3%

12 2( ) 10,26%

2( )-17,95%.

14 –

97,6%

PASI, sPGA, PASI(75) PASI(50)

CD8<sup>+</sup> CD4<sup>+</sup>

-1 -2, -8, TNF- , -10

[Chandran V. 2010, Kopel E., 2013, Rachakonda T.D., 2015, Michalek I. M. 2017].

2010, . 2015, . ., 2016., BlauveltA., 2008., Chandran V.R., et al., 2010, Clark R.F., et al., 2015].

[ . 2008, . 2010, . 2012., . 2013., Mirandola P.2007 Kopel E.2013 .].

24-28





2( ) 2( ).

· , · , (90)

32(35,6%), 23(32,2%), -

18(20%).

(45 ), 14

(PASI, sPGA, ).

PASI 1 c 12,42±3,84

5,63±2,36, 2,1 PASI-54,6±3,45% (p<0,001).

2,2 , PASI-53,1±5,2%; 1( ) PASI

PASI 2,1

PASI-53,7±3,42% (p<0,001).

sPGA 1( ) 3,17±1,02 2,27

, 28,4% (p<0,05) 1( ) 4,13±1,52 3,01±1,23 26,8%

(p<0,001).

[ . ., 2010., . ., 2013., Costantino M.L., 2010., Kopel A. 2013].

- ( - )

- PASI(75) 12(26,7%), PASI(50)

27(60,0%) PASI(75) - 9(20,0%) , PASI(50)  
 15(33,3%). PASI(75) 3(6,7%), PASI(50)  
 - 17(37,8%), PASI(25) 4(8,9%) .

, 14 -  
 - 1( )  
 49,6% -

- 1( ) 44,1% (  
 ).

,  
 : PASI 1( ) 2( )  
 PASI ( PASI-53,1±5,2%, PASI-53,4±5,8%)  
 2( ) PASI ( PASI-67,7±3,45%),  
 1( ),  
 PASI ( PASI-54,7±3,29%) (p<0,001).

sPGA

1( )	2( )	3,17±1,02	1,86±0,96,
-		1( )	4,01±1,07 3,12±1,1,
		2( )	4,26±1,27 2,01± 0,96

(P<0,05).

, - -  
 PASI(75) 8(17,8%) , 3  
 (6,7%), PASI (50) 20(46,7%) - 21(45,3%) PASI  
 (25) 2 (4,5%) 4(8,7%)

(1).



- 1( )

2( ) - CD4<sup>+</sup> 21,1±3,17, CD8<sup>+</sup> 41,9±6,29,  
CD68<sup>+</sup>, CD4<sup>+</sup>/CD8<sup>+</sup> 0,56±0,08,

- . [20, 45, 46, 105, 127].

TNF- , -1, -6

1( ) 2( )

(P<0,001).

, -

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, 14 ,

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D4<sup>+</sup>/CD8<sup>+</sup>

CD4<sup>+</sup>,

-

( D3+HLA-DR+), NK(CD3+CD16+CD56+) (P<0,05).

-

-1 18,1%, -2 46,1%, -10 69,3%, TNF- 68,2% (P<0,005),

,

.

1( ) 2 ( )

-2, -10, TNF- ,

- -1 -8,

(p>0,05).

,

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,  
 ,  
 ,  
 - 1 , -6, TNF-  
 -  
 CD4<sup>+</sup>/CD8<sup>+</sup> -1 ,  
 -6, TNF-  
 .  
 (p<0,01).

14

CD3<sup>+</sup> CD8<sup>+</sup> TNF- (r=-0,22); CD8<sup>+</sup>  
 CD4<sup>+</sup>, CD3<sup>+</sup> ; PASI CD3<sup>+</sup>, CD4<sup>+</sup>, CD8<sup>+</sup>  
 TNF- ,

,  
 .  
 ,  
 -  
 .  
 -  
 -  
 .

- (PASI, sPGA,

).

PASI<10, sPGA<3, <10

14

: PASI>10, sPGA>3, >10

( )

14

28 (14

14

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1.

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,

PASI, sPGA 3,5; 2,5; 3,6 PASI(75) ,  
 PASI(50) 60,0% .  
 - PASI,  
 sPGA - 2,3; 1,5; 2,5 , PASI(75) , PASI(50)  
 49,2% .  
 45(100%).

2.

CD4<sup>+</sup> CD8<sup>+</sup> - -  
 ( -1 , -2, -8, TNF- ) -10  
 .  
 -  
 ,  
 -  
 - -2, -8, -10,  
 TNF- .

3.

CD8<sup>+</sup> - CD4<sup>+</sup>/CD8<sup>+</sup>  
 TNF- , -1, -6  
 .  
 ( ,  
 - )  
 ,  
 CD4<sup>+</sup>,  
 CD8<sup>+</sup>  
 -1, TNF- , -6 .

4.

-

2( ) 6 20,51%

2( ) - 33,3%

12 2( ) 10,26% , 2( )

-17,95%.

( )

14

(PASI<10),

« », « »

20-25

t° - 38°

( 40 / , t°- 37°C)

20

15

- 1 600

600

, 1

14

,  
 15  $t^{\circ} - 36-37^{\circ}$   
 40 /  $t^{\circ} - 37^{\circ}$   
 15  
 1 600  
 , 1  
 600 . 28 (14  
 14 ).

1. / . . , . . , . . , . .  
// , .-2012.- 2.- .74-79.
2. 2- ,  
/ . . [ . ]// .-2014.- .35, 1.- .21-
- 23.
3. IL12B  
- / . .  
[ . ]// .-2011.- 6.- C.25- 28.
4. . .  
: . . . . . / . . .-  
, 2012.- 25 .
5. . . : , ,  
/ . . , . . // ,  
. -2012.- T.89, 3.- .50- 54.
6. . .  
: . . . . . / . . .-  
2003.-28 .
7. . . / . .  
// Consilium medicum:  
. -2005.- .7, 3.- .181- 188.
8. P. P. -  
/ . . // ,  
. -2007.- 1.- .38- 39.
9. , . .  
/ . . , . .

- // . – 2011. – . 92, 6. – . 807–813.
10. . . « » .  
/ . . //  
– 2016 – 5 – . 32–38.
11. / . . [ . ] //  
. – 2007. – 2. – . 14–21.
12. . . / . .  
, . . , . . // , ,  
. – 2008. – 1. – . 41–55.
13. . . / . . ,  
. . . , . . // . – 2011. –  
8 (86). – . 50–53.
14. . . / . . . –  
: , 2017. – . 3. – 312 .
15. . . :  
: .... ... . . / . . . –  
, 2011. – 26 .
16. , . . :  
. .... . . / . . . – , 2014. – 25  
.
17. . . -  
/ . . //  
. – 2009. – 1. – C. 23.
18. A. M. -  
/ A. M. , . . , . . //  
. – 2000. – 4. – C. 4–5.

19. . . . / . . .  
 // . – 2009. – 5. –  
 C. 54–57.
20. . . . : .  
 .... - . / . . . . – , 2005. – 32 с.
21. . . . -  
 : .... ... . / . . . . – ,  
 2005. – 26 .
22. . . . / . . . , . . . // “ . ”.  
 . – 2012. – 4. – . 47– 51.
23. . . . / . . . , . . . //  
 . – 2010. – 2. – . 58– 63.
24. « » -  
 -  
 / . . . [ . ] //  
 :  
 .  
 . – , 2014. – . 29–35.
25. / . . .  
 , . . . , . . . //  
 . – 2011. – 1. – . 23–27.
26. . . . - / . . .  
 // ,

. – 2001. – 6. – C. 534– 537.

27. / . . . , . . . , . . . , . . .  
. – : , 2003. – 283 с.

28. . .  
/ . . . , . . . // :  
. – , 2004. – . 52– 54.

29. . . -  
/ . . . , . . . , . . .  
// . – 2012. – 3. – . 155– 158.

30. . .  
. .  
/ . . //  
. – 2002. – 2. – . 33–36.

31. . .  
/ . . . , . . . , . . . //  
. – 2008. – 2. – . 24–

27.

32. . .  
/ . . . , . . . // . –  
2009. – 4. – . 148–151.

33. . . . .  
( ) / . . . , . . . , . . . , . . .  
. . . // . - 2018. - 2. -  
C.148-151.

34. / . . . , . . . , . . . , . . . //  
. – 2012. – 5. – C. 20– 29.

35. . .  
/ . . . //  
. – 2007. – 5. – . 13– 17.

36. / . . [ .]// . .7. – 2015. – .2.– C. 85–87.

37. . . : . . . . / . . . – , 2006. – 22 .

38. . . / . . // , . – 2007. – 2. – . 25– 27.

39. . . : . . . . / . . . – , 2013. – 23 .

40. . . / . . , . . // . – 2013. – 2.– P. 21– 23.

41. PASI (Psoriasis Area and Severity Index) / . . [ .] // . – 2016.– 4.– C. 33– 38.

42. « » ( )/ . . [ .]// . – 2015. – .2, 4. – C. 123– 127.

43. . . / . . , . . , . . , . . , . // . – 2015. – 1-5. – . 1065-1071.

44. . . / . . , . . , . . // .-2013.- 1.- .56-58.

45. . . -

46. . . . / . . . //  
 .-2011.- 5.- .70-77.
47. . . . ( ) : . .... . . / . . . - ,  
 2011.-48 .
48. . . . , / . . . //  
 .-2008.- 1.- .52-54.
49. . . . h17 — : / . . . // .-2009.- .8,  
 2.- .3-15.
50. . . . -
51. . . . ( ) : . .... . / . . . - ,2005.-22 .  
 NF-kB
52. . . . , . . . // .-2009.- 3.- .7-12.  
 [ . ] // .-

2001.- 2.- .15-17.

53. . . . / . . .  
, . . . // .-2003.- .5,  
1-2.- .11-28.

54. . . . « ®300»  
/ . . . , . . .  
// .-2006.- 2.-  
.14-16.

55. . . . / .  
.- : . . ., 2007.- 703 .

56. . . . ( . . . )/  
, . . . , . . . .  
- : , 2001.- 528 .

57. . . . : . . . /  
. . . , . . . // - .-  
2018.- .56, 5.- .649-654.

58. . . . / . . .  
, . . . // Consilium Medicum.- 2004.- 3.- .176-  
179.

59. . . . ( ) : . . . . . . . .  
: 14.00.11 / . . . .- M , 2007.- 23 .

60. . . . - . . . / . . .  
, . . . // : . . .  
.-2013.- 1.16 .

61. . . .

/ . . . , . . . , . . .

- , . . . // .- 2015- . 2.- .

85-102.

62. . . .

,

/ . . . , . . . //

:

.

.- , 2014.- . 29- 35.

63. . . .

/ . . . , . . . //

.- 2006.- 4.- . 11-

15.

64. . . . / . . . ,

. // .-2011.- 6

65. . . .

/ . . . 66.

// ,

.- 2008.- 2.- . 41.

66. . . .

/ . . . . . ,

. . . // .

2014;(6):69-76.

67. . . .

2003-2016 . /

. . . , . . . , . . . //

. 2017;(6); . 22-33.

68. . . .

/ . . . , . . . //

. 2014;(5):60-67.

69. . . . / . . . //  
 . – 2010. – 1. – . 35–47.
70. . . . – 4-  
 ./ . . . – , 2010. – 42 .
71. . . . / . . . , . . . , . . .  
 // . – 2015. – 2. – . 159–  
 164.
72. . . . / . . . , . . . // , , .  
 – 2013. – 1. – . 45– 51.
73. . . . : . . . . . / . . . . – , 2004. –  
 25 .
74. . . . / . . .  
 , . . . , . . . . – , 2015. – 232 .
75. . . . / . . . , . . .  
 , . . . // . – 2010. – 1.  
 – . 57– 66.
76. « » / . . . [ . ] //  
 . – 2007. – 5. – . 11– 12.
77. [ . ] // . – 2011. – 5. –  
 . 64– 69.
78. . . . -  
 / . . . , . . . //

. – 2007. – 46. – . 1087– 1091.

79. . .

/ . . , . . , . . //

. – 2004. – 4. – . 4– 6.

80. . . / .

. , . . , . . // . – 2004. – 1. –  
.39– 44.

81. . .

/ . . , . . , . . //

VI

, 1989. – . 2. – . 455.

82. . , /

//

: . « -  
2004». – - , 2004. – . 167.

83. . .

//

/ . . , . .  
. – 2001. – 2. – . 14–

16.

84. . .

, . . //

. – 1993. –

10. – . 44– 47.

85. . .

//

/ . .  
. – 1981. – 9. – . 56–

58.

86. M . . /

C. A. M // . –

2004. – 1. – . 17–20.
87. . . .  
: . . . . / . . . . –  
- , 2017. – 48 .
88. / . . . , . . .  
. . . . //  
. – 2008. – 6. – . 15–19.
89. . . . // – 2016. . 18 –  
7. – . 31–32.
90. . . . // – 2017. –  
2(85). – . 80–85.
91. . . . //  
. – 2009. – 2. – . 53–54.
92. : [ ] / . . .  
[ ] // — : III  
( - , 23–27 . 2007 .). – -  
, 2007.
93. 2013 /  
,  
« -  
» . – , 2014. – . 1.–  
.138.
94. : , , / . . .  
// Consilium medicum. – 2010. – 5. – . 3–8.

95. . . . / . . . ,  
. . . , . . . // . – 2015. – 9. – .483.
96. . . . / . . . , . . . , . . .  
. // . – 2006. –  
3. – .38–42.
97. 50  
/ . . . [ . ] //  
, . – 2011. – 2.  
– .9–14.
98.  
« » .  
, ,  
2013—2015 . / . . , . . . , . . . , . . .  
. // . – 2016. – 3. – .16–  
32.
99. ,  
/ . . . , . . . , . . .  
, . . . //  
. – 2013. – 6 – .28–30.
100.  
/ . . . [ . ] //  
.– 2010. – 4. – .33–39.
101. , . . . / . . .  
, . . . // . – 2004. – 5. – .38–43.
102. . . .  
/ . . . , . . . //  
. – 2012. – 4. – .
- 146.
103. -  
/ . . . [ . ] //

. - 2017. - 11- 12. - . 63- 67.

104. . . . / . . . . - :  
MYPE, 2012. - . 2 : . - 116 .

105. . . . / . . . . , . . . . // . -  
2012. - 4. - . 213- 219.

106. . . . / . . . . , . . . .  
, . . . . //  
. - 2006. - 2. - . 24- 27.

107. . . . ( ) /  
. . . . , . . . . // . - 2015.-  
3. - . 45- 52.

108. -  
( ) , - 2015  
- ( 1).- . 31.

109. / . . . . , . . . . , . . . .  
, . . . . . - : - ;  
, 2007. - 300

110. . . . - / . . . .  
, . . . . . - : , 2004. - 720 .

111. / . . . . , . . . . , . . . .  
, . . . . // . - 2014.-  
6.- . 69-76.

112. / . . . . [ . ] //  
. - 2013. - 5. - . 78-90.

113. . . . / . . . . // ,  
. - 2007.- 1.- . 39-40.

114. . . . BCD-085 –  
-17

II

... / . . . , . . . , . . . ,  
. . . , . . . , . . . //  
. 2017;(5):52–63.

115. . . .  
: . . . . . / . . . . – ,  
2014. – 24 .

116. -  
: . . . . – , 2015.  
– 31 .

117. . . . : / . . . , . . .  
. – , 2007. – 527 .

118. . . . - / . . .  
, . . . , . . . // . –  
2010. – . 9, 4. – . 121–122.

119. / . . . , . . .  
. , . . . . , . . . //  
. – 2011. – 1. – . 11–14.

120. . . « »  
/ . . . , . . . , . . .  
. . . // . – 2015. –  
. 32–36.

121. . . . / . . .  
, . . . . – , 2001. – 334 .

122. - 311

- / . . , . . , . . , . .  
 // . - 2011. - 1. - .  
 36-40.
123. - / . . [ . ] //  
 , . - 2010. - 4. - . 16-20.
124. . . / . . //  
 . - 2005. - 1. - . 19-22.
125. / . . [ . ] / . -  
 : , 2002. - . 24-86.
126. . .  
 311
- : . ... . . / . . . - , 2011. -  
 36 .
127. . . / . . , . .  
 . - - : , 2000. - 231 .
128. . . : . / . .  
 . ,, . . // . - 2007. - 5. - . 30 -32.
129. . . ( )  
 / . . // . - 2010. - 6. - . 273-275.
130. . . / . . , .  
 . . . // . - 2016. -  
 4. - . 20-26.
131. . . / . . // . - 2012. - 3. - .  
 26-29.
132. . . : / . . ,  
 . . , . . . - 3- . . - : «

», 2010. – 752 .

133. . . « » ( )/ . . , . . . . -2015.- 4. .123-127.

134. . . / . . , . . . , . . . // .-2014.- 5.- .123-127.

135. , . . / . . , . . // .-2012.- 3.- .355-357.

136. . . - . : . . . . / . . - ,2016.- 25 .

137. . . . - : ,2007.- 212 .

138. . / . , . // .-2007.- 4.- .17-21.

139. . . , : . . . . / . . . - ,2004.- 28 .

140. / Mirandola P. [et al.] // J Cell Physiol. -2007.-Vol.213(3). -P.826-33.

141. / . H. [ . ] // :

- IV ( , 18-21 . 2012 ). – , 2012. – .68.
142. FOXP3 / . . [ . ] // . – 2010. – .31, 6. – .318–321.
143. - / . . [ . ] // . – 2006.– 5.– C.637–640.
144. A classification of psoriasis vulgaris according to phenotype / C. E. Griffiths [et al.] // Br. J. Dermatol. – 2007. – Vol.156. – P. 258– 546.
145. A study about hepatitis C virus infection in patients with psoriasis in a Brazilian reference center / D. L. Andrade [et al.] // Acta. Gastroenterol. Latinoam. – 2012. – Vol.42, 4. – .285–290.
146. Alka, D. Nail Psoriasis: The Journey So Far / D. Alka, K. A. Amanjot // Indian J. Dermatol. – 2014. – Vol. 59, 4. – . 319–333.
147. Amelioration of epidermal hyperplasia by TNF inhibition is associated with reduced Th17 responses / L. C. Zaba [et al.] // J. Exp. Med. – 2007. – Vol. 204. – P.3183–3194.
148. Anti-inflammatory effects of H2S during acute bacterial infection: a review / F. Benedetti, S. Curreli, S. Krishnan, S. Davinelli // Journal of Translational Medicine. –2017.–Vol.15.– P.100.
149. Antoniu S.A. Targeting the TNF-alpha pathway in sarcoidosis / S. A. Antoniu // Expert. Opin. Ther. Targets. – 2010. – Vol.14, 1. – P.21– 29.
150. Anupam, M. Cytokine-based therapy in psoriasis / M. Anupam, R. S. Fallen, L. H. Cavalcante // Clinical Reviews in Allergy and Immunology. – 2013. – Vol.44, 2. – . 173–182.
151. Assessment of the psoriatic transcriptome in a large sample: additional regulated genes and comparisons with in vitro models / J. E. Gudjonsson [et al.] // J. Invest. Dermatol. – 2010. – Vol.130, 7. – P.1829–1840.
152. Baker B. S. Peptidoglycan and peptidoglycan-specific th1 cells in psoriatic skin lesions / B. S. Baker, J. D. Laman, A. Powles[et al.] // The Journal of

- pathology. — 2006. — Vol. 209, No. 2. — P. 174–181.
153. Blauvelt A. Thelper 17 cells in psoriatic plaques and additional genetic links between IL-23 and psoriasis / A. Blauvelt // *J. Invest. Dermatol.* – 2008. – Vol.128. – P.1064–1067.
154. Chandran V. Geoepidemiology and environmental factors of psoriasis and psoriatic arthritis / V. Chandran, S. P. Raychaudhuri // *J. Autoimmun.* – 2010. – Vol.34. – P. J314–J321.
155. Christophers E. Psoriasis—epidemiology and clinical spectrum / . Christophers // *Clin. Exp. Dermatol.* – 2001. – Vol.26. – P. 314–320.
156. Clark R. A. Resident memory T cells in human health and disease / R. A. Clark // *Sci Transl Med.* – 2015.– Vol. 77 (269).– P. 269.
157. Climatotherapy of psoriasis and hypertension in elderly patients at the Dead-Sea / . . Kushelevsky, . Harari, . Hristakieva, J. Shani // *J. Dermatol.* –1996 – Vol.34(1-2). – P. 87– 91.
158. Comparison of ustekinumab and etanercept for moderate-to-severe psoriasis / C. E. M. Griffiths [et al.] // *N. Engl. J. Med.* – 2010. – Vol.362. – P.118– 128.
159. Costantino M.L. Psoriasis and mud bath therapy: clinical-experimental study / M. L. Costantino, E. Lampa // *La Clinica terapeutica.* – 2010.–Jul-Aug. – .12–13.
160. Cytokines and anticytokines in psoriasis / A. T. Pietzak [et al.] // *Clin. Chim. Acta.* – 2008. – Vol.394. – P.7–21.
161. Dead-Sea climatotherapy versus other modalities of treatment for psoriasis: comparative cost-effectiveness / J. Shani [et al.] // *Int J Dermatol.* – 1999. – Vol.38, 4. – P. 252– 62.
162. Decline in transcriptional activity of Nrf2 causes age-related loss of glutathione synthesis, which is reversible with lipoic acid / J. H. Suh [et al.] // *Proc Natl Acad Sc USA.* – 2004. – 101. – P.3381–3386.
163. Determinants of quality of life in patients with psoriasis: a study from the US population / J. M. Gelfand [et al.] // *J. Am. Acad. Dermatol.* – 2004. – Vol.51. – P.704–708.
164. Effects of a-lipoic acid and L-carnosine supplementation on antioxidant

- activities and lipid profiles in rats / Mi Young Kim [et al.] // *Nutr Res Pract.* – 2011. – Vol.5, 5.– P. 421– 428.
165. Efficacy and safety of utekinumab, a human interleukin-12/23 monoclonal antibody, in patients with psoriasis: 52-week results from a randomised, double-blind, placebo-controlled trial (PHOENIX 2) / K. A. Papp [et al.] // *Lancet.* – 2008. – Vol. 371 (9625). – P.1675– 1684.
166. 167. Eissing L. Psoriasis registries worldwide: systematic overview on registry publications/ Eissing L., Rustenbach S.J., Krensell . // *JEADV.* 2016. Vol. 306. P. 1100–1106.
167. Etanercept improves quality of life outcomes and treatment satisfaction in patients with moderate to severe plaque psoriasis in clinical practice / R. Vender [et al.] // *J Cutan Med Surg.* – 2012. – Vol.16(6).– P.407– 16.
168. Finlay A.Y. Dermatology Life Quality Index (DLQI) – A simple practical measure for routine clinical use / A.Y. Finlay, G. K. Kahn // *Clin Exp Dermatol.* – 1994.– Vol.19. – P. 210–216.
169. Feng Y.Y.Genetic variants of the genes encoding zinc finger protein 313 and interleukin -13 confer a risk for psoriasis in a Chinese Uygur population/ Feng Y.Y.SunL.D.Zhang// *Clin Exp.Dermatol.*2013 Oct;38(7):768-74.
170. Griffiths C. E. M. Pathogenesis and clinical features of psoriasis / C. E. M. Griffiths, J. N. Barker // *Lancet.* – 2007. – Vol.370. – P.263–271.
171. Gudjonsson J.E. et al. Assessment of the psoriatic transcriptome in a large sample: additional regulated genes and comparisons with in vitro models/ Gud Gudjonsson J.E., Ding J., Johnston A. // *J. Invest. Dermatol.* 2010. Vol.130(7). P.1829–1840
172. Guidelines of care for the management of psoriasis and psoriatic arthritis: Section 2. Psoriatic arthritis: overview and guidelines of care for treatment with an emphasis on the biologics / A. Gottlieb [et al.] // *J. Am. Acad. Dermatol.* – 2008. – Vol.58. – P.851– 864.
173. Harari M. Dead sea climatotherapy for psoriasis vulgaris: analysis of short-term results / M. Harari , Yaron Sela, Arie Ingber and Daniel Vard // *journal Glob*

- Dermatol, 2016. Volume 3(3): 295-301.
174. Henseler T. Psoriasis of early and late onset: characterization of two types of psoriasis vulgaris / T. Henseler, E. Christophers // *J. Am. Acad. Dermatol.* – 1985. – Vol.13. – P.450–456.
175. How stress gets under the skin: cortisol and stress reactivity in psoriasis / A.W. Evers [et al.] // *Br J Dermatol.* – 2010. – Vol.163. – P. 986–991.
176. IL-17 and Th17 cells / T. Korn, E. Bettelli, M. Oukka, V. K. Kuchroo // *Annu. Rev. Immunol.* – 2009. – Vol.27. – P.485–517.
177. IL-23 stimulates epidermal hyperplasia via TNF and IL-20R2- dependent mechanisms with implications for psoriasis pathogenesis / J. R. Chan [et al.] // *J. Exp. Med.* – 2006. – Vol.203. – P.2577–2587.
178. IL-23 upregulates IL-10 and induces IL-17 synthesis by polyclonally activated naive T cells in human / S. Van den Eijnden [et al.] // *Eur. J. Immunol.* – 2005. – Vol.35. – P.469–475.
179. Incidence of psoriasis and association with comorbidities in Italy: a 5-year observational study from a national primary care database / G. A. Vena [et al.] // *Eur. J. Dermatol.* – 2010. – Vol.20. – P.593–598.
180. Increase in TNF-alpha and inducible nitric oxide synthase-expressing dendritic cells in psoriasis and reduction with efalizumab (anti-CD11a) / M. A. Lowes [et al.] // *Proc. Natl. Acad. Sci. USA.* – 2005. – Vol.102. – P.19057–19062.
181. Increased expression of interleukin 23 p19 and p40 in lesional skin of patients with psoriasis vulgaris / E. Lee [et al.] // *J. Exp. Med.* – 2004. – Vol.199(1). – P.125–130.
182. Innate Immunity and Inflammation in NAFLD/NASH. / M. Arrese [et al.] // *Dig. Dis. Sci.* – 2016. – PMID: 26841783.
183. Interleukin 10 treatment of psoriasis: clinical results of a phase 2 trial / K. Asadullah [et al.] // *Arch. Dermatol.* – 1999. – Vol.135. – P.187.
184. Interleukin-17 is produced by both Th1 and Th2 lymphocytes, and modulates interferon-gamma- and interleukin-4-induced activation of human keratinocytes / C. Albanesi [et al.] // *J. Invest. Dermatol.* – 2000. – Vol.115. – P.81–87.

185. Interleukin-23 promotes a distinct CD4 T cell activation state characterized by the production of interleukin-17 / S. Aggarwal [et al.] // *J. Biol. Chem.* – 2003. – Vol. 278. – P.1910–1914.
186. Jacobson C.C. Latitude and psoriasis prevalence / C. C. Jacobson, S. Kumar, A. B. Kimball // *J. Am. Acad. Dermatol.* – 2011. – Vol. 65. – P.870–873.
187. Jacobson C.C. Rethinking the Psoriasis Area and Severity Index: the impact of areas should be increased / C. C. Jacobson, A. B. Kimball // *Br J Dermatol* – 2004. – Vol.151(2). – P. 381– 387.
188. Jochen Schmitt Gottfried Wozel. The Psoriasis Area and Severity Index Is the Adequate Criterion to Define Severity in Chronic Plaque-Type / Jochen Schmitt Gottfried Wozel // *German. Dermatology* – 2005. – Vol.210.–P. 194–199.
189. Keratinocytes as targets for interleukin-10-related cytokines: a putative role in the pathogenesis of psoriasis / K. Boniface [et al.] // *Eur. Cytokine. Netw.* – 2005. – Vol.16. – P.309–319.
190. Keratinocytes in inflammatory skin diseases / C. Albanesi, C. Scarponi, M. L. Giustizieri, G. Girolomoni // *Curr. Drug. Targets. Inflamm. Allergy.* – 2005. – Vol.4. – P. 329–334.
191. Kopel E. Effect of the Dead Sea climatotherapy for psoriasis on quality of life / . Kopel, . Levi, . Harari // *Isr Med Assoc J.* – 2013. – Vol.15(2).– P.99–100.
192. Krueger J.G. Psoriasis pathophysiology: current concepts of pathogenesis / J. G. Krueger, A. Bowcock // *Ann. Rheum. Dis.* – 2005. – Vol.64, (Suppl 2). – P. 30–36.
193. Lee H. A. Alpha-lipoic acid modulates NF-kappa B activity in human monocytic cells by direct interaction with DNA / . . Lee, D. A. Hughes // *Exp Gerontol.* – 2002. – Vol.37(2-3). – P. 401– 410.
194. Lee W.Y. Molecular mechanisms of lipoic acid modulation of T-type calcium channels in pain pathway/W.Y.Lee., P. Orestes ., J.Latham et al. // *J. Neurosci.* – 2009-. Vol. 29. 30.- P. 9500–9509.
195. Lowes M. A. Immunology of Psoriasis. /Lowes M. A., Suárez-Fariñas M. J. G. Kruger // *Annu. Rev. Immunol.* 2014;32:227.

196. Leonardi C. Anti-Interleukin-17 Monoclonal Antibody Ixekizumab in Chronic Plaque Psoriasis. / Matheson R., Zachariae C. et al. // N. Engl. J. Med. 2012;366(13):1190–1199
197. Metabolic abnormalities associated with initiation of systemic treatment for psoriasis: evidence from the Italian Psocare Registry / P. Gisondi [et al.] // J. Eur. Acad. Dermatol. Venereol. – 2013. – Vol. 27. – P. 30–41.
198. Mrowietz U., Kragballe K., Nast A., Reich K. Strategies for improving the quality of care in psoriasis with the use of treatment goals – a report on an implementation meeting. J. Eur. Acad. Dermatol. Venereol. 2011;25:1468-3083.
199. Michalek I. M. A systematic review of worldwide epidemiology of psoriasis. / Michalek I. M., Loring B., John S. J Eur Acad. Dermatol Venereol. 2017;31(2):205–212
200. Osmanovic A. The Risk of Skin Cancer in Psoriasis Patients Treated with UVB Therapy. / Gillstedt M., Wennberg A.M., Larkö O. // Acta Derm Venereol. 2014 Jul; 94 (4): 425-30.
201. Palaniyappan A. Immunomodulatory effect of DL- $\alpha$ -lipoic acid in aged rats / Palaniyappan // Exp Gerontol. – 2011. – Vol.46(9).– P. 709– 71.
202. Papp K.A. PSOLAR: design, utility and preliminary results of a prospective, international, disease-based registry of patients with psoriasis who are receiving, or are candidates for, conventional systemic treatments or biologic agents / Papp K.A. Strober B., Augustin M. // J. Drugs Dermatol. 2012. Vol. 11(10). P. 1210–1217.
203. Patients with early-onset psoriasis achieve better results following Dead Sea climatotherapy / Harari [et al.] // J Eur Acad Dermatol Venereol. – 2012. – Vol.26 (5).P. 554– 559.
204. Prevalence and treatment of psoriasis in the United Kingdom—a population-based study / J. M. Gelfand [et al.] // Arch Dermatol. – 2005. – Vol.141. – P.1537– 1541.
205. Psoriasis is common, carries a substantial burden even when not extensive, and is associated with widespread treatment dissatisfaction / R. S. Stern [et al.] // J. Invest. Dermatol. Symp. Proc. – 2004. – Vol. 9. – P.136–139.

206. Psoriasis vulgaris lesions contain discrete populations of Th1 and Th17 T cells / M. A. Lowes [et al.] // *J. Invest. Dermatol.* – 2008. – Vol.128. – P.1207–1211.
207. Rachakonda T.D. Psoriasis prevalence among adults in the United States/ Rachakonda T.D., Schupp C.W., Armstrong A.W. // *J Am Acad Dermatol.* 2014. Vol. 70(3) - .512–516.
208. Reich . Drug safety of systemic treatments for psoriasis: results from The German Psoriasis Registry PsoBest / Reich . Mrowietz U., Radtke . // *Arch Dermatol Res.* 2015. Vol. 307. P. 875–883.
209. Schon M. P. Psoriasis / M. P. Schon, W. H. Boehncke // *N. Engl. J Med.* – 2005. – Vol.352. – P.1899–1912.
210. Simultaneous measurement of multiple Th1 and Th2 serum cytokines in psoriasis and correlation with disease severity / S. E. Jacob, M. Nassiri, F. A. Kerdel, V. Vincek // *Mediators Inflamm.* – 2003. – Vol.12. – P.309–313.
211. Stern R.S. PUVA Follow-Up Study. The risk of squamous cell and basal cell cancer associated with psoralen and ultraviolet A therapy: a 30-year prospective study.// *J Am Acad Dermatol.* 2012 Apr; 66 (4): 553-6
212. Th17 cytokines interleukin (IL)-17 and IL-22 modulate distinct inflammatory and keratinocyte-response pathways / K. E. Nograles [et al.] // *Br. J. Dermatol.* – 2008. – Vol.159. – P.1092–1102.
213. The evaluation of psoriasis therapy with biologics leads to a revision of the current view of the pathogenesis of this disorder / S. Philipp [et al.] // *Expert. Opin. Ther. Targets.* – 2006. – Vol.10. – P.817–831.
214. The IL-23/T17 pathogenic axis in psoriasis is amplified by keratinocyte responses / . . Lowes [et al.] // *Trends Immunol.* – 2013. – Vol.34. –P. 174–181.
215. The role of cells and cytokines in the pathogenesis of psoriasis / S. Coimbra [et al.] // *Int. J. Dermatol.* – 2012. – Vol.51. – P.389–398.
216. The self-administered psoriasis area and severity index is valid and reliable / S. R. Feldman [et al.] // *J Invest Dermatol* – 1996.– Vol.106. –P. 183–186.
217. Warren R.B. Differential drug survival of biologic therapies for the treatment

of psoriasis: a prospective observational cohort study from the british association of dermatologists biologic interventions register (BADBIR)./ Warren R.B. Smith C.H., Yiu Z.Z.N. // Journal of Investigative Dermatology. 2015. Vol. 135. P. 2632–2640.

218. Wenzel U. Alpha-lipoic acid induces apoptosis in human colon cancer cells by increasing mitochondrial respiration with a concomitant O<sub>2</sub>-generation / U. Wenzel, A. Nickel, H. Daniel // Apoptosis. – 2005. – Vol. 10(2). – P. 359– 368.

219. What are the best outcome measures for assessing plaque psoriasis severity? A systematic review of the literature / . Puzenat [et al.] // J Eur Acad Dermatol Venereol. 2010. – p.216.